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CORRIGENDA.

Page 13, line 5, from bottom, *for* 'proper' *read* 'improper'

" line 21, *dele* the comma after 'charter'

" 69, line 18, *for* 'buryial' *read* 'burial'

" 80, line 3, from bottom *for* 'Yâjñavâlkya' *read* 'Yâjñavalkya'

" 81, line 4, from bottom *after* 'specimens' *insert* 'of'

" 83, line 7, *for* 'कृे' *read* 'क्रे'

" 85, line 7, *for* 'contracts' *read* 'contrasts'

" 115, lines 9, 10, *for* 'தென், த்தென், சென், ச்சென்,' *read* 'தேன், த்தேன், சேன், ச்சேன்'

" 126, note § *for* 'πι-ἐδ-γω' *read* 'πι-ἐδ-jω'

" 130, 'line 12, *for* '*(a)*' *read* '*(b)*' and in the second note *for* '*' *read* '*(b)*'

" 141, *for* Páṇḍiya *read* Páṇḍya

ADDENDA.

Page 9, line 21 *add the following note* Sadagopam சடகோபம் from Skr. *çaṭha-kopa* literally 'wrathful at craft' (*çaṭha*) a name for a Vaishṇava priest of the Rámanuja sect, and also for the crown of gilt copper or brass which he wears.

" 141, line 5 *add* 'See, too, the *Mitákshará*, translated by Colebrooke, chap. I. sec. III, § 4.

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Native Law as administered in the Courts of the Madras Presidency. By John Dawson Mayne, Esq., *Barrister at Law.*

One of the most difficult and at the same time important questions which arise after a conquest, is to decide upon the law by which the conquered race shall be governed. At a first glance there seems to be merely a choice between two alternatives, the law of the conquered, or the law of the conquerors. Indolence and liberality both seem to be in favour of the former alternative, and probably the majority of men would unhesitatingly pronounce for it, without a suspicion that their decision could be either impolitic or unjust. Yet it may possibly be both one and the other.

The law of a nation is merely an authoritative expression of its social condition, at the time the law came into force, so far as that social condition is recognised by the State. But that social condition may have passed away, or be passing away, or may be so radically unsound, that it ought to be altered. In the two former cases the law is no longer suited to the requirements of the conquered, and it would be unjust to enforce it. In the latter case, the law is an actual

hindrance to their improvement, and its maintenance is impolitic. For instance, those rules which directed the sovereign to have Bráhmans alone as his teachers, councillors, and judges, were probably wise enough in the days of Manu, when all learning was possessed by the highest caste. But they are absolutely unsuitable now, and the Hindús themselves would consider it the grossest tyranny if they were observed. On the other hand, however suitable it might be to the views of Hindús, that widows should be burnt with their husbands, or compelled to lead a life of compulsory celibacy, it is evident that no enlightened ruler ought to sanction, or even to suffer, such a law.

It is evident, also, that the mere fact that a conquered nation is living side by side with a body of conquerors, gives rise to a new state of things, which ought to be considered in every sound system of jurisprudence. The days are gone by when a horde of savages could overrun a civilised state, and it may be safely assumed that every permanent conquest will signalise the victory of a superior over an inferior race. It is merely mock modesty to ignore in legislation a fact which is palpable and admitted. If the conquerors are a superior race, their social condition is probably higher, and their laws are probably wiser. Now to confine the subject population to their own laws, is simply to deny them the benefits of a better code. It is exactly the same mistake which the English made in Ireland, when they refused the rights of English law to the Irish without the Pale. Such a denial, too, tends to perpetuate those very causes of disunion between the two races which it is most important to obliterate. Religion, laws, language and dress are the four most powerful instruments of amalgamation or separation. The almost absolute union between the English and the East Indian community arises from the latter having borrowed from us all four. There is nothing to prevent the Hindú adopt-

ing our religion, our language and our dress, and it is impossible to see why he should not be allowed to adopt our laws if he chooses. In fact this was the very point that was mooted in the important case of *Abraham* v. *Abraham*, now pending in the PrivyCouncil,* where a family of Hindú Christians had assumed the European in everything but colour, but were told by the late Ṣadr Court of Madras that they were still an undivided Hindú family, and were gravely referred for their rule of conduct to Manu and the Mitákshará. If any such impassable gulf is to be fixed between the races, it is idle to talk of educating the Native to the level of the European. It is a mere mockery to imbue him with the principles of Justinian or Blackstone, if he cannot in his own person escape from the frivolities of the shasters or the Ḳurán.

It seems to me, then, that the law which is applied to a conquered nation should be made to conform to the following canons:

First, that the subject-race should be allowed to retain so much of their own substantive law, as is necessary for the maintenance of their religion and their social usages, provided it infringes upon no rule of morality or of public policy.

* The decision of the Ṣadr Court has been reversed by the Privy Council, in a judgment which reached this country after the above passage was in type. Their Lordships have ruled—

1st. That Hindú law is not obligatory on a Christian convert.

2nd. That his status after conversion is not necessarily governed by English law, but that he may adopt Hindú usage or English usage, or a usage compounded of both, at his pleasure.

3rd. That the usage so adopted is itself only binding upon him, or upon his family, during pleasure, and that he may change it whenever, and however he thinks fit.

This decision is an immense boon to the community of Native converts. But the state of uncertainty in which it leaves their legal position is certainly one which calls for legislative interference.

Secondly, that provision should be made for the gradual development and modification of this system of law, in accordance with the growth and improvement of the people themselves.

Thirdly, that every Native should be allowed to adopt the legal status of the conquerors—such adoption to be final, but to be made without prejudice to any existing rights.

Fourthly, that all adjective law, and all substantive law, in which public interests are concerned, should be regulated according to the best principles of known jurisprudence, without any reference to existing usages, further than policy may dictate.

Let us examine how far our administration of justice to the Natives has been in accordance with these rules.

The first point is to a certain extent provided for by express statute. The Regulation which constituted the Mofussil Courts enacts that "in suits regarding succession, inheritance, marriage, and caste, and all religious usages and institutions, the Muḥammadan laws with respect to Muḥammadans, and the Hindú laws with regard to Hindús are to be considered as the general rules by which the Judges are to form their decisions." Curiously enough, nothing is said in this regulation about suits founded on contracts, nor are the Judges required to pay any regard to the native system of land-tenures. The Charter of the Supreme Court of Madras supplied this deficiency as regards contracts. It is provided that "in the cases of Muḥammadans or Gentoos, their inheritance and succession to lands, rents and goods, and all matters of contract and dealing between party and party shall be determined in the case of the Muḥammadans by the laws and usages of the Muḥammadans, and where the parties are Gentoos, by the laws and usages of the Gentoos, or by such laws and usages as the same would have been de-

termined by, if the suit had been brought and the action commenced in a Native Court: and where one of the parties shall be a Muḥammadan or Gentoo, by the laws and usages of the defendants." The Court was also expressly directed in all such suits, to make such rules as should be most convenient to the religion and manners of the Natives, and to the said laws and usages respectively. Here again nothing is said of land tenures, though in this case the omission is less important, since in the great majority of questions connected with land, the title of the several claimants would be a matter of contract and dealing, either express or implied. Practically, both the Mofussil and Supreme Courts have given the fullest effect to the Native law of contracts, and to all local usages affecting landed rights, so far as they have been able to ascertain them.

This, then, is the real problem: to ascertain, not what *was*, but what *is* the Native law on any given question. Here the Judge is met by a difficulty of a peculiar character. The Hindú and Muḥammadan Codes, differing as they do in almost every other feature, agree in this, that each represents itself as the result of a divine revelation. Such a Code from its very nature never can be carried out as a whole. Every lawgiver, whether human or divine, legislates with respect to the objects which he desires to effect, and the means at his disposal for detecting and punishing the infringement of his ordinances. But both the objects and the means differ most widely according to the character of the legislator. The human lawgiver aims at the security and prosperity of the community. The divine lawgiver desires the observance and spread of his religion, of which happiness is to be at once the result and the reward. The former only interferes with the conduct of men so far as it affects the interests of others. The latter forbids misdeeds as being acts of disobedience to himself, which endanger the

future welfare of the individual. And as they vary in their objects, so do they differ in their means. The former is deficient in sources of knowledge, limited in powers of coercion. The latter is omniscient to detect, omnipotent to punish. Each is able to administer his own law. But as soon as a Divine Code is committed to a human tribunal, the Judge finds that he is launched upon enquiries wholly foreign to the purpose for which he was appointed; that he is unable to satisfy himself as to the guilt of the offender; that he can neither enforce the observance of the rule, nor exact the penalty for its breach. Nor does it make the smallest difference whether the Code is a real or a pretended revelation. Laws which purport to be divine will always represent that which, in the opinion of the inventor, would be the mandate of the Deity. The maxims of Manu and Muḥammad are quite as incapable of being made the text-books of a Court of Justice, as those of the Pentateuch or the Gospels.

The first difficulty, then, which encounters an Indian Judge is, that he has to administer two Codes, in each of which crimes and transgressions, duties and virtues, legal obligations and ceremonial observances are inextricably mixed up, and yet are all inculcated by the same authority. Much of the law cannot, and more of it should not be enforced; but where is the line to be drawn? More especially, how is it to be drawn by a Judge who is sworn to give the litigants the benefit of their respective religions, and who is precluded from taking into consideration his own disbelief in or contempt for the particular rules to which he is referred?

It may be said that many of these maxims are merely directory, and that it is always possible to distinguish between those which are of that nature, and those which are intended to be imperative. But so far as there is any truth in this assertion, it is merely the statement, in another form, of the fact that some branches of the law are incapable of

being enforced. It is the very essence of a Divine Code that no part of it is directory, as distinguished from being imperative. It all proceeds from the same authority, and is all enforced by the same sanctions. Nothing short of absolute obedience is obedience at all. He who offends against the least part is guilty of disobeying the whole.

Nor probably can it be denied that there was once a time at which the whole body of this law was, if not absolutely enforced, at least considered as strictly enforceable. The relation between the State and the Subject was in ancient times much more paternal than it is now. The father who does not look after the morals and religion of his son would be abandoning his duty, and in many parts of the world, even now, the same duty is supposed to devolve on the sovereign. There have been few nations whose governors did not at some time or other meddle with the religion of their subjects, and make it compulsory upon them, not only to go to Heaven, but to go there by a special path marked out for them by their rulers. It is unnecessary to point to the Spanish Inquisition, when we remember that less than two hundred years ago, in Scotland, men were racked and crushed in boots for believing in the Bible without Bishops, instead of believing in the Bible with Bishops. We should wholly fail to understand the spirit or reality of many ancient Codes, if we forgot that in olden days the relationship between the Deity and his creatures was looked upon in a light which the weaker faith and colder reverence of modern times can hardly understand. Then it was no metaphorical form of expression to say that God walked in the garden with Adam. The Deity was not only supposed, but expected, to interfere actively in all the more important affairs of life, and in many of its unimportant affairs, if specially solicited. And, naturally enough, man felt himself bound, so far as in him lay, to carry out the views of one, who

was not only his Divinity, but his most powerful ally. To us nothing can seem more absurd than the ancient system of trial by ordeal. To those who practised it nothing could seem more natural. When we read that there was a time, when the guilt or innocence of a Hindú was made to depend upon his power of remaining under water while a man ran and returned the length of a bowshot; or upon his succeeding in taking a ring out of a vessel without being stung by a cobra coiled within, we seem to be reading of lunatics. The essence of the ordeal appears to have been the impossibility of escape, and so it was. But the Hindú confidently expected the Deity to interfere in favour of innocence, and if he did interfere, the greater the impossibility, the more convincing was the justification. And so in the days of chivalry, when two knights met in combat to clear their aspersed honour, the words "God defend the Right" were no empty sounds, but the expression of a real belief that strength and skill would prove unavailing against the lance which was held by a pure hand.

It certainly cannot be said of the Indian Judges, that they showed any desire to ignore the religious or customary rights of the Natives, or that they were too early tormented by doubts as to their own capacity for adjudicating upon them. No doubt it must at first have been startling to an English gentleman to have to decide, whether a particular caste should be allowed to wear white shoes; whether pilgrims to a particular shrine might take their purificatory bath with any priest they liked, or only with certain special Bráhmans; whether it was good cause for excommunication, that a man having a daughter to marry, and his choice of two nephews as husbands, had intended to marry her to the younger in defiance of the prescriptive claims of the elder. Our Judges seem, however, to have behaved very much as an ordinary man would, on finding himself in fairy-land.

Having satisfied themselves, after a natural hesitation, that the whole thing was real and meant in earnest, they went into it with the seriousness of true believers. Accordingly, we find the Madras Ṣadr Court, with inflexible gravity, awarding to a claimant the precise amount of betel, and the special form of garland to which he was entitled on religious festivals. We find them laying down as undoubted law, "that institution of public worship by one of two rival sects, in innovation of prevailing usage, should not be permitted;" and anxiously enquiring of their Paṇḍits whether the same rule did not apply to private as well as to public worship. So far did their complaisance extend, that, not contented with forbidding particular forms of worship, they proceeded to regulate the ritual according to which each form should be conducted. In 1841 they decided upon the admissibility of certain mantrams, or holy verses, and in 1858 they solemnly forbade the blasts of a *tiruchunam* at some special crisis of pagoda performance; adopting the decision of the lower court, "that the blowing of a *tiruchunam* or trumpet, or the use of any musical instrument at the time of crowning the defendants with the *Saḍagopam*, whether at the commencement or conclusion of their ministration, was an unwarrantable innovation on the established and ordinary ritual, of which plaintiffs had a right to complain, and by which they would be aggrieved and endamaged in their feelings and honour."

In all these cases, the Native Judges of the original Courts had, as might have been expected, exercised their jurisdiction unhesitatingly, while the Judges of the Civil Courts frequently struggled, either to avoid trying such cases at all, or to decide them according to European notions of justice and liberty. In this effort, however, they were until 1858 invariably baffled by the older and more Indianised occupants of the Ṣadr Bench. Those Judges regarded the Natives, as

a geologist regards his fossils, whose sole interest to him consists in their representing a departed antiquity. They resisted every effort to modernise the Hindú, as Professor Owen would reject the offer of an elephant for an ichthyosaurus. Their crowning triumph was when they silenced the blasts of the unorthodox tiruchunam. But this triumph proved fatal. On that occasion the Court was divided, and Mr. Strange was in the minority. He wrote an able and elaborate judgment, denying that the Civil Courts had any jurisdiction in matters of ceremonial usage. He was over-ruled, but the question arose again in 1861. The points in that case were described as being, "at what time the plaintiffs may join the defendants in the recitation of a prayer; which of the plaintiffs is entitled to do so; whether the tengala priest is entitled to a blessing to be pronounced at the conclusion of the prayer; whether a hymn may be sung in his honour; whether certain festivals called birthstar festivals are to be kept; and whether the images may be taken out in procession." On that occasion the propriety of the tiruchunam decision was canvassed, Mr. Strange's views were adopted, and the important rule was laid down, that mere matter of ceremonial or religious usage cannot be made the subject of a Civil Suit. This decision has been frequently ratified by the High Court in the present year. Leading Gurus have sued in vain for sacred cakes and blue fire, and a dispute whether the idols of the Conjeveram pagoda should, or should not, be marked with a triangle upon their noses, which had agitated Chingleput for a generation, and taxed the acumen of successive Judges and Magistrates, has at last been thrust forth, without a decision.

The ruling of 1861 was no doubt sound and sensible. But it may be questioned, whether the grounds of the decision were not reprehensibly narrow, and whether the Court did not throw away an opportunity of inculcating a great

lesson upon the Native mind. If an English Rector were to sue the members of his congregation for not touching their hats to him, or for attending Little Bethel instead of the Parish Church, an English Court would meet him, not by denying its own jurisdiction, but by denying his right of action. It is evident that most of the cases mentioned before rested upon the assumption, that every thing which was old was right, and every thing which was new was a wrong. The grandchildren of dead priests, who had extracted fees from the grandfathers of living pilgrims, claimed the right in their own persons to extort similar fees from the existing generation. New pagodas and unusual processions were forbidden, on grounds which would have equally warranted an injunction against railways and gaslamps. A bold assertion of the principle of individual liberty, and a clear exposition of the doctrine, that *damnum sine injuriâ* will not support a civil action, would have gone far to release the Native from his thraldom to custom, and to terminate that state of arrested progress which is his greatest bane.

It might have been expected that Courts which were so willing to comply with Hindú usage, however opposed to common sense, in matters of religion, would have fallen into at least equal absurdities in matters of contract and inheritance. Such absurdities might naturally be expected in the Hindú and Muḥammadan laws, from that tendency to confound the immoral and the illegal—that which can be enforced by man, and that which can only be enforced by God—which, as I have already said, always marks a Code framed on the theory of a divine inspiration. For instance, the Hindú law laid it down, that all those brothers who are addicted to any vice should lose their title to the inheritance; and that, although in general sons should share alike, this was only where they were equal in good qualities; but that he who

was distinguished by science and good conduct should take a greater share than the rest. The Muḥammadan law, as being more modern, and perhaps from the more practical character of its author, contains fewer anomalies. But many even of its principles, as, for instance, the legal disabilities imposed upon a prodigal, show that the distinction between prudential and compulsory obligations was far from understood. Yet our reports show very few instances of foolish decisions in this department of law, springing from a servile adherence to Native maxims of jurisprudence. Several reasons account for this. One of the most important was, that our English Judges really knew very little of Native law, and what they did know came to them filtered through a few European minds, and cleared of all its impurities, and most of its frivolities. It is difficult to overestimate the evils which would have ensued, if all our early Judges, conscientiously anxious as they would be to administer Native law, and ignorant as they generally were of the first elements of jurisprudence, had possessed sufficient knowledge of the languages to investigate for themselves the original sources of the system they were sworn to dispense. What absurdities they would have fallen upon, any Native law-book will show; while a perusal of Jagannátha's Digest will prove that those absurdities would not even have the merit of consistency. But men seldom see the worthlessness of that which they have laboured to acquire, and Judges, who had striven to be Paṇḍits, would have succeeded in producing a conflict of decisions, few of which would have been recognised by a Native as conformable with usage, and still fewer of which would have been considered by a jurist to be law. From this fatality they were saved by their own fortunate ignorance, and by the still more fortunate knowledge of a few. Men like Sir Wm. Jones, H. T. Colebrooke, Ellis, Sutherland and W. H. MacNaghten supplied the materials

which were built up into a harmonious edifice by their own recorded decisions, and by the elaborate treatises of the two MacNaghtens, and Sir Thomas Strange. Their learning was sufficiently extensive to enable them to set off the glosses of one commentator against those of another. Their own personal enquiries served to show them how far the law of books corresponded with the living law of the people, and their acquaintance with general jurisprudence enabled them to systematise the whole into a body of law, which can, without an anachronism, be dispensed in the 19th century. They were not merely quarrymen but architects, and it is one of the most valuable results of their labours, that materials, which were within their reach, but which were not employed by them, may generally, and with safety, be disregarded as rubbish.

Another circumstance which tended greatly to direct our Judges, was the ready assistance which they could always command from experienced Natives. The officials of their own Courts, the Native Judges whose decisions came before them in appeal, the Paṇḍits whom they were directed to consult, were all, in a rough general way, acquainted with the state to which the law, by a long process of detrition, had arrived. If pressed by the authority of some ancient text, they disposed of it by simply saying that in the present degenerate age that was no longer law—in other words, that the nation was no longer governed by the maxims of a theocracy. Even while admitting that the particular proceeding in question was contrary to existing law, they got rid of the illegality by holding, that an act, in itself proper, might originate valid rights. In the words of the Roman maxim "Factum valet quod fieri non debuit." And it should be remembered, that this Native assistance was all the more valuable, because the very same men, who, in matters of religious or caste prejudice, would have been

more irrational than children, were, in matters of secular life, as shrewd and practical a race as the world could show.

But a further fact, as important as either of the foregoing, was this, that in matters of daily civil right the Englishman felt at liberty to be guided by his own common sense. He no longer felt that the questions submitted to his consideration were matters upon which it would be an insult to his own understanding to attempt to form an independent opinion. He returned from fairyland, and decided as a man adjudicating for men. Very high authority could be produced from Native treatises to show, that the contest between creditor and debtor should be carried on with the formalities and sequences of International Law. The creditor was first to make strong personal representations of his rights. He was then to resort to the moral pressure of mediation. If this failed, he might make reprisals upon his debtor's goods, and if even this did not bring the defaulter to reason, he might (if strong enough) "having tied the debtor, carry him to his own house, and by beating or other means compel him to pay." But we may be sure that such citations would have had little weight with a European Judge, who, as Police Magistrate, was responsible for the peace of his district, and who, in his private capacity, had a favourite Arab, which might be about an equivalent for his own debts in the bazar.

There were, however, some Hindú laws and customs, which were at once too anomalous to be recognized, and too deeply rooted to be either ignored, or overthrown by mere judicial decision. The practice of sitting *dharṇa*, according to which the creditor enforced payment of his demand by starving himself at his debtor's door*(a)*, was forbidden by an

(a) It will appear on the publication of the Brehon laws that this practice also prevailed among the most westerly members of the Aryan race, namely the Irish Celts.—W. S.

enactment of 1795. Widow-burning was first made criminal in 1829. Slavery was abolished by an Act of 1843. An Act of 1850 provided that change of religion or loss of caste should no longer be attended by forfeiture of civil rights. Finally an Act of 1856 did all that legislation can do in favour of widows' remarriages, by declaring them valid, and by enacting that after any such remarriage the widow should forfeit no rights which she had formerly possessed, except in respect to property derived from her first husband.

On the whole then it may be laid down, that with the exception of one class of cases, viz., those of a purely caste or religious character, the administration of Hindú and Muḥammadan law in this Presidency has conformed to the first canon which I have ventured to propose. It has maintained as much of the Native law as was necessary, for the preservation of the Natives' national individuality, and no more.

It is certainly curious that those who framed the Charter of the Supreme Court, and the Mofussil Regulations after them, should have fancied that all the Natives subject to the East India Company were included in the terms Muḥammadans and Hindús; or, as the Charter, absurdly calls them, Muḥammedans and Gentoos. Parsees, Jews and Armenians, and all those aboriginal Hill-tribes who are as different from the A′ryan Hindús, as an ancient Basque from a modern Parisian, are passed over in utter silence. Practically our Courts would in any given case be willing to allow them the benefit of their own laws, if they could be ascertained. But they are unascertained, and by ordinary research unascertainable. The three former of these classes are remarkable for their desire to assimilate themselves to the English, and probably the simplest plan would be to place them under the English law as it is applied in India to British subjects. As to the Hill-tribes, they are probably not likely for some time to come under judicial notice except as criminals. As

they advance in civilisation, there can be no reason why they should not also come under English law, in preference to any other. In fact neither Hindú, nor Muḥammadan law can with propriety be applied to any who do not profess the religion upon which the law is based. The English system has the great advantage of being perfectly neutral.

The nature of our judicial system supplies very imperfectly that which I consider to be the second fundamental requirement; viz., that provision should be made for the gradual development and modification of the Native law, in accordance with the growth and improvement of the people themselves.

It is evident that as civilisation increases, new wants and new habits of life will arise, and these in turn will originate new rights, and call for new remedies. External commerce will multiply ships. Internal communication will introduce carriers. Money-dealings will be conducted by negotiable instruments. All of these will raise questions of law previously unknown, and the answers to these must be supplied, either by invention, or by borrowing from some system which has already solved similar difficulties. Here what is required is simply to fill up a blank. But from similar causes it will also happen, that rules which were admirably adopted to a nation in their primeval state, become absolute fetters upon them when they are emerging into a higher condition. Laws which assume that every one is in a state of stereotyped and unambitious simplicity, are absolutely injurious when society is getting broken up into new forms, and when every individual is demanding for himself that liberty of action, which was formerly reserved for the family or the village. Here what is required is, not to fill up a blank, but to remove an incumbrance.

There never has been any difficulty in supplying the former species of want. As all the advances in civilisation

made by the Hindús within the last century, have been caused by ourselves, and as the tendency of these advances has been to assimilate the Native to the Englishman, it follows that whenever a blank was found in the Native law, it could be at once supplied by a chapter out of an English text-book. Nor did our Indian Judges ever shrink from adopting this principle, though they were not always happy in the way it was carried out. A great deal of so-called English law will be found in the Ṣadr Reports of the last ten years. But, by some singular fatality, it seems in general to have been introduced into India, on the same principle as that on which uniforms are exported to the colonies—because they have been cast off at home. Champerty and Estoppel, which had long since fallen into disfavour in Westminster, have been absolutely petted in Madras. Oral evidence has been pronounced inadmissible, (not merely untrustworthy) to an extent which goes beyond the strictest requirements of the Statute of Frauds. Ignorant Natives have been held bound by what they had said, and even by what they had not said, in their pleadings, with a rigour surpassing that of Baron Parke in his sternest moments. This current of decisions set in about the time that the Ṣadr Court was first attended by a professional Bar, and no doubt the two facts were connected as cause and effect. I have no doubt that the presence of the Bar was, on the whole, of the greatest benefit in the administration of justice. But it is certain that when professional advocates practise before unprofessional Judges, the tendency is to cause technicality of decision. Without the least wish to mislead, the pleader naturally presses those cases which make most in his own favour, while the Judge, not clearly seeing the principle on which they rest, or not having before him other cases by which they are explained, yields, overpowered, as he thinks, by authority. When we remember, too, that in the majority of

cases, an English Barrister on one side was either unopposed, or only opposed by a Native Vakíl, the chances were increased that the scales of justice would not be held strictly even. Then the bad decision of one day was made a precedent for a worse decision the next, or a judgment, which was in itself perfectly sound, was rested on reasons so unsound as to be a fruitful source of evil. Any one who compares the earlier with the later decisions of the Ṣadr Court, will, I think, be struck with the superior power and independence of mind shown by the former, whether they were right or whether they were wrong.

Fortunately the amalgamation of the Ṣadr and Supreme Courts took place at a time when the creation of a new body of law, for which no precedent could be found in the jurisprudence of any other nation, was becoming a serious evil. Since the 15th of last August much of the redundant growth of the previous ten years has been pruned away, and we may feel assured that for the future, chapters left blank in the Native Law will not be filled in from a corrupt text.

The second want, which arises from the growing unsuitability of Native law to the advancing condition of the people, is one which our judicial, and even our legislative, system is singularly unfitted to remedy. In every other country the law, as enunciated from the Bench, almost imperceptibly adapts itself to the changing requirements of the people. In England our Common Law Judges, without legislation, and even in defiance of legislation, struck off the fetters which hindered the transfer of land, when those fetters ceased to be beneficial. After the common law had become too much hardened to receive any further shaping, the Equity Judges stepped in, and practically remoulded the common law, by relieving against much of its rigour, and by redressing evils which it refused to notice. But the Judges

who so operated upon the English law were Englishmen. They experienced in their own persons, and in the persons of their friends, the inconveniences which they sought to remedy, and they were not bound by any express statute to administer an entire system of rules, whether those rules were just or unjust, sensible or absurd.

Now all such judicial modifications are effectually precluded in India by the fact that Native law is administered, not by Natives, but by Englishmen. No doubt the great majority of Judges are Natives. But practically the law is administered by those who occupy the appellate benches, and especially by those who sit in the Court of final resort. Now these are exclusively Englishmen, and therefore, if they are on the watch, the law can never assume any shape which they are unwilling to sanction. And in general they will be unwilling to sanction a change. If the nation comes to outgrow some time-honoured principle of Manu or Muḥammad, a Native Judge would be willing silently to relax the rule. Not so the Englishman. He neither feels the pressure, nor acknowledges the propriety of yielding to it. If it is pointed out to him, that clothes which fitted the boy will cramp the man, he will either deny that the boy has grown, or else reply, that he regrets the circumstance, but that he is strictly sworn neither to increase the quantity of the material, nor to permit any alteration in the cut. The result is that those who are anxious to amend the law have not the power, and those who have the power have not the inclination. From a liberal desire to give the Natives the benefit of their own law, we have put out of their reach the most effectual means of amending it.

No doubt legislation might accomplish those changes, which judicial interpretation is forbidden to effect. But in India this remedy is peculiarly slow and imperfect. Till

lately the Indian legislature consisted, at first of three knots, and afterwards of a single knot, of Europeans, all from their antecedents highly conservative, and from their responsibility nervously anxious not to do anything which might alarm Native prejudice. How deeply felt, and how utterly ungrounded, such fears were, is shown by the long delay which took place before widow-burning was abolished, and by the perfect composure with which its abolition was accepted by the Hindús. It is evident that such a body was very unlikely to attempt to remodel a law, whose inconveniences they did not feel, unless some strong cry was got up against it. The Natives, however, are not a people to get up a strong cry about anything, and certainly will not exert themselves in favour of a reform. Besides, legislation aims at sweeping measures and general uniformity. But improvements in law are ever most salutary when they are most gradual, and the differences of race and usage in India render uniform legislation almost impossible.

On the whole, then, it may be said, that while the growth of the community rendered many changes in its laws most advisable, those changes could only be made by the Judges or the Legislators. Of these, the Judges who would make reforms could not, and those who could make reforms would not, while the Legislators neither could nor would.

The recent subdivision of the Indian Legislature, and the admission of Natives as Members of Council, and as Judges of the High Court, will tend to remedy the evils at which I have glanced. But I fear that it will be long before the indolence and timidity which has marked our internal administration, will give way to a bolder and wiser policy.

There are, it is true, some circumstances which have counteracted the obstacles to reform that I have just mentioned. The influence of the Native Judges and Court officials has

often materially affected the decisions of those, who were too lazy or too unlearned to make up their minds for themselves. The authority of the Paṇḍits upon points not laid down in the ordinary text-books has been generally accepted as conclusive. Occasionally, too, the Privy Council, with happy audacity, has remodelled the law which it professed only to declare.

A few instances will make all this clearer.

Probably every people in its passage to civilisation, has gone through a stage in which all rights have assumed a corporate form. Whether this arose from the necessity for union to resist violence, or because the earliest conceptions of rights were drawn from the paternal government of a family, it is unnecessary to consider here. The fact is undoubted. As Mr. H. S. Maine remarks, "Ancient law, it must be again repeated, knows next to nothing of individuals. It is concerned not with Individuals but with Families, not with single human beings, but with groups."

India presents the most perfect and interesting example of this stage of civilisation. Not to mention the village communities, each of which is a little republic, complete in itself, the normal state of property here is to be vested in a family; and not in an individual. The individuals die, but the family continues. Not only does the family system exist in India, but it exhibits three distinct phases, each of which evidently marks an onward stage in the transition to individual rights. In Malabar, the family forms a Tarawád, or united community, whose entire property is managed by its senior member. The property cannot be dealt with, or encumbered by any of the members except the manager, nor even by him, except for the benefit of the family. No member can break up the tarawád by enforcing a division, and any land which he may acquire by his indivi-

dual exertions will fall into the bulk of the family property. This is evidently the strictest, and therefore the oldest form of corporate union.

In Southern India, the rule is more relaxed. The normal condition of the family is still non-division, and as regards all landed property, not only a man's sons, but his grandsons, and great-grandsons are actually co-proprietors with him, and have a vested interest during his life. But, unlike the law of Malabar, the father may dispose of his moveable property as he likes, and his self-acquired property will not merge into the general family fund, but will go direct to his lineal descendants in preference to collaterals. Further, any one of the co-sharers, lineal or collateral, may at any time break up the family union by calling for his own share.

The Bengal law goes still further. A man's sons are merely his heirs, but in no sense his co-proprietors, even as to property which he has himself inherited. He may alienate some (it is not settled how much) of his ancestral landed property without their assent, and if he alienates more than he ought, the act seems to be merely improper, and not illegal. His sons cannot compel him to come to a division, even of the property which he has derived from his ancestors; and if he does divide it, he is entitled to a double share. A man's widow takes his property in Bengal, in preference to his collateral relations; whereas in Southern India she takes nothing but a right to maintenance, unless her husband was divided.

This is not the place, nor indeed have I the materials, to discuss the causes by which these remarkable changes were brought about. But it is evident, that as the law of Southern India is more favourable to energy and progress than that of Malabar, so the law of Bengal is more favourable than that of Southern India, and that the law of Bengal is,

in its turn, merely a compromise between the corporate system which it is abandoning, and the system of individual rights to which it tends. Where people are living in a state of arcadian simplicity, without the desire or the possibility of advancement, the family system is a very sound one, as it prevents properties being split up, and enables a number of persons to be supported with the maximum of comfort on the minimum of means. But as soon as Society begins to dash ahead, then the effect of the corporate union is deadening in the direct ratio of its strictness. Who will work with full energy, when the benefit of his labour goes, not solely, nor even chiefly, to himself? Who will work at all, when some one else is working for him? Ingenuity could not contrive a more effectual plan for damping the spirit of the industrious, and extinguishing the spirit of the idle. It makes the best member of the family a slave, that the others may be sloths.

Now, one might have anticipated, that the same causes which made the inhabitants of Southern India partially emancipate themselves from the bondage of family union, would have made them aim at the greater freedom attained in Bengal. Accordingly Mr. Strange, in the preface to the second edition of his *Manual of Hindú Law*, laments that the practice of enforcing a division is growing much more frequent than it used to be before British Courts of Justice were established. If I may judge from my own experience of Mofussil litigation, I should say that Natives are making incessant attempts to deal with their property as if they were under Bengal law, and these attempts seem to be constantly acquiesced in by their own family, and sanctioned by the Native Judge in the original Court. I have constantly seen suits in which the only question raised by the litigants in the lower Court was, whether a particular alienation had

taken place in fact: and it was not till the case arrived in the Ṣadr Court, that European Counsel took the objection, that the alienation was invalid by law, and European Judges held the objection to be fatal. I infer from this, that if it had not been for the Ṣadr Court, the Native tribunals would by this time have evolved a law, differing little, if at all, from that of Bengal. There is no doubt that the Natives of the Presidency town of Madras, have, for many years, been in the habit of dealing with their property, with the sanction of the Supreme Court, in a manner which certainly would not have been permitted by the Ṣadr Court. I do not say that the Supreme Court was right according to the Mitákshará, but I am sure its decisions were consonant to the wishes of the people, and to sound policy. Further, for many years back the Ṣadr Court had two Paṇḍits, of whom the elder, whenever consulted, always gave his decision according to strict Madras law; the younger Paṇḍit always, if possible, according to Bengal law. This got to be so well known, that the opinions of the latter on any point upon which the two systems differed were invariably set aside as a matter of course. But if the other Paṇḍit had been of the same reforming school, or if the Bench had not possessed a Judge so skilled in Southern Law as Mr. T. L. Strange, and so eager for its maintenance, we should probably, ere now, have slid insensibly from the Mitákshará of Madras to the Dáyabhága of Bengal. And therefore I believe that the Madras Ṣadr Court has been preserving the purity of the law against the wishes of the people, and that it has checked the natural modification which the law would otherwise have received.

It is curious to trace the fate of Wills, as an instance in which that modification was, by little more than an accident, carried out.

No doctrine seems to be more thoroughly established, than that wills are unknown to Hindú Law, and even to Hindú language. This was implied from the corporate theory of property. It would be a contradiction in terms to suppose that a man who was only entitled to a joint enjoyment of property, as a member of the family, could by will dispose of the whole or any specific part of it. This would be to allow him greater power over the family-estate after his death, than he had possessed during his life. At the same time, so inevitable is the tendency of the human mind to grasp at larger and longer dominion; so certain is the transition from management to proprietorship, that the same causes which were gradually raising the rights of the individual at the expense of his family, were sure, sooner or later, to extend the power of alienation during life to that of disposition after death. In Bengal, where the rights of the joint owners were rapidly crumbling away before the usurpation of the manager, it might have been expected that this final step would be taken at the first favourable opportunity. This opportunity was presented by the establishment of the Supreme Courts, which were prepared to look upon wills as a mere matter of course. Accordingly we find that in Bengal, even beyond the jurisdiction of the Queen's Courts, the practice of testamentary disposition soon sprang up, and was readily recognised. It was a novelty no doubt. But so wide had the powers of the head of the family already become, that it was a novelty rather of form than of principle. In Madras, during the whole of this century, Native wills were unhesitatingly admitted to probate by the Supreme Court. But although it is certain that the Queen's Judges favoured the desire to make wills, it is equally certain that they did not create it. This is shown by the numerous instances of wills which came under the notice of the Mofussil Courts. There, however, their fate was

different. The Hindú law which prevailed in Madras was so much stricter than it was in Bengal, that wills were generally scouted on their first appearance as radical innovations. In 1824, no doubt, the Madras Ṣadr Court laid it down as their opinion, "that under the Hindú Law, a man is authorised to dispose of his property by will, which under the same Law, he could have alienated during his survivorship, by any other instrument." This decision was confirmed by the Privy Council. It did not however settle the question. The facts of the case rendered the decision upon the testamentary power of a Hindú almost extra-judicial, since the so-called testator had actually placed his so-called devisee in possession of the property during his life, and all this was recited in the will. In reality, therefore, for the purposes of the case, the instrument was not a will but a deed of gift, and deeds of gift had always been recognized by Hindú law. Accordingly numerous cases followed in which the Madras Ṣadr Court expressly denied the validity of Hindú wills, and the Madras Regulation V of 1829 pronounced, that they were "instruments unknown to the Hindú law," and provided, that they should "have no legal force whatever, except so far as their contents might be in conformity with the provisions of the Hindú law, according to the authorities prevalent in the respective provinces under that Presidency." One would have imagined that this was a final closing of the testamentary career which had commenced. It seemed that wills must thenceforward be mere waste paper. If they altered the course of succession pointed out by the Hindú law, then they were to have "no legal effect." If they did not alter it, then the law would operate without their aid. This dilemma was acted upon for many years. But in 1851 the question was raised again before the Ṣadr Court, in a case precisely fitted to settle it. A man had, by a document which was strictly a will, diverted his

property from one who was undoubtedly his heir to a stranger. On appeal the Madras Ṣadr Court upheld the validity of the will. The Court consisted of a single Judge who was not supposed to possess any exceptional skill in Hindú law. He rested his decision upon a Bengal case, and upon the opinion of the Paṇḍits. The Bengal case could be no authority in Madras, whose law was confessedly different upon the very point in dispute. The Paṇḍits afterwards alleged that they had misunderstood the question which was put to them, and supposed they were asked as to the validity of a gift *inter vivos* followed by possession, and not as to the effect of a disposition to take effect for the first time after death. The decision was appealed against, and was affirmed by the Privy Council. Their Lordships admitted that testamentary instruments were unknown to ancient Hindú law, and declined to lay down any broad rule as to the extent to which they might be valid in the Presidency of Madras. But they gave effect to this particular will; apparently on the ground that the opinion of the Paṇḍits had been in its favour and that two successive Judges, who seemed to have taken a great deal of pains in the case, had confirmed that opinion.

Oddly enough the matter was not even then at rest. The question came again before the Ṣadr Court in 1861, when the Judges, with more logic than subordination, decided that the ruling of their own Court in 1851 was as bad as it could be, and that of the Privy Council was no better, and flatly refused to be bound by its authority. Several similar decisions followed, none of which could be made the subject of appeal, and wills appeared again to be in a bad way. But on the 15th August 1862 the Courts were amalgamated, and another will-case came before the new High Court. Respect for the Privy Council had now resumed its place as an element of decision. The conflicting judg-

ments were criticised from a chronological point of view, the mutiny was quelled, and wills in the Madras Presidency are now placed on as firm a footing as they are in Bengal. And so an important social revolution was effected by a combination of chances, at least as unlikely as those which brought about the torpor to which Mr. Kinglake ascribes the Sebastopol expedition.

The result, then, of this long discussion seems to be that two problems press for a solution. We want to know what the law of the people really is, and what they wish it to be. The first presents little difficulty. The most important law-treatises are at present translated, and all others of admitted authority, such as the Smṛiti Chandriká and the Sarasvatî Vilása, should be published in the original with English translations interpaged. On collating these it would probably be found that the books of each school of law coincided in the main, but that they differed in minor particulars, and that each of them laid down various rules which would at once strike the mind as being obsolete or incapable of being enforced. A good many of these points, again, would be found to have been expressly adjudicated upon. Still a certain residuum of doubt would remain, and this ought to be made the subject of enquiry, by circulating questions to persons of learning—and experience, such as Judges, Native and European, Paṇḍits and others whose opinions would carry weight. The answers obtained might either be made the basis of legislative enactments, or might by their own force as *responsa prudentum* settle the law.

Some steps of this nature seem peculiarly necessary with regard to those parts of the country which are governed by unwritten local usage. It is to be feared that the Natives of such places have often been condemned to live under local usages, of which no one had ever heard till they arrived

there in a decree from Madras. It is bad enough that the uniform administration of the law should be broken in upon by local usages, which really are known to the people, and which are cherished by them. But it is worse, when those local usages are invented for the people, and are distasteful to them. A commission to take evidence on the spot upon all matters of special usage, would not only get rid of the danger of palming off new traditions as old ones, but would also probably reveal the fact that many of the old traditions have become obsolete and unsuitable to the wants of the community.

The next point is a more difficult one. It is obviously impossible to lay down rules as to the circumstances under which Judges should vary from the law which they are bound to administer. But there is no doubt that great room would be left for the spontaneous and unconscious legislation of the people, if litigants were always shut out from taking in appeal points of local or national law, which they had not taken in the original Court. For instance, the Malabar law does not allow of a suit for division, and if such a suit were brought, and the defendant took the point, he ought to have the benefit of it. But if he simply denies that the plaintiff is a member of the family, that amounts to a waiver of his own legal right to remain under all circumstances undivided, and I cannot see why the Court should force upon him the benefit of a law, which he is willing to dispense with, or of whose existence he is not aware. Of course it would be completely different where the law was one of those broad principles of jurisprudence, which every Court, in every stage of proceedings, ought to maintain. As, for instance, where the action was brought upon an immoral or illegal contract.

Our main reliance, however, for all radical changes, must be upon direct legislation. If enlightened Natives, who know the feelings and wants of their countrymen, and espe-

cially if those Natives who are members of the respective Legislative Councils, would come forward boldly and advocate those reforms which their altered social state renders necessary, they would confer incalculable benefits upon India. A measure for extending the power of Natives to make wills and to dispose of their self-acquired property has been introduced into the Madras Council by the Hon. V. Saḍagópáchárlu, and is a step in the right direction. A few more such measures would go far to release the Natives of India from the shackles with which an antiquated law has entangled them.

The third rule which I have suggested, viz., that Natives should be allowed to adopt the legal status of their conquerors, is one wholly unknown to our present system, yet its advantages are obvious and it is difficult to see what objections can be urged against it. Upon merely political grounds it is plain, that an identity of law would be one of the strongest bonds of union between the two races, and would go far to prepare the way for an identity of religion. On social grounds it is also plain, that our system of law, which is framed so as to give the greatest possible liberty to the individual, which removes all restrictions upon the transfer of property, which furnishes to every man the strongest possible motives for growing rich, while it supplies him with every facility for doing so, must be much better adopted to the wants of modern society than the Hindú law, whose essence is a scheme of communistic bondage. It is also plain, that although we have undertaken not to force our laws upon our subjects, there can be no reason why we should not allow them to adopt those laws if they choose to do so. If they do not avail themselves of the permission, at all events no harm would be done. But if they do, and to the exact extent that they do, there would be an immediate benefit.

I am inclined to think that even at first a considerable number would be willing to avail themselves of the option. All those classes who have no law, or no ascertained law, such as Jews, Armenians, and Parsees would probably at once accept the status of an Englishman, and feel a pride in doing so. So would those Native Christians, whose wealth and social position made the law by which they were governed a matter of any interest to them. In time, though perhaps not at first, their example would be followed by Natives who were founding their own fortunes by trade, professions, or official employment. In dealings with Hill-tribes and others, who appear to have no system of their own, the law of England might be tacitly introduced. Indeed we might go further and lay it down as a rule, that the English law should apply to all persons, and in all cases, where no recognised Native law appropriate to such persons applied.

Two great advantages, form a merely legal point of view, would arise from such an enactment. First, it would supply the want which has been so much felt, of a *lex loci*, capable of ready application in all cases not governed by Native usages. In the next place, the necessity of applying English law in India would probably compel many improvements in it, of which it is readily susceptible, and which alone are wanting to make it nearly perfect.

I am aware that the mere suggestion of introducing English law, at once draws forth an outcry from persons of every shade of intellect, from that of Mr. Bentham to that of Mr. Dickens. But those who know anything of the subject will at once see the emptiness of such an outcry, when directed against English law in India. Most of the sound objections to English law arose from its procedure, not from its principles. But in India the principles only, and not the procedure would apply. For instance, the system of common-law pleading was defective in giving neither party suf-

ficient notice of the case which he had to meet, and in exposing both to the chance of being tripped up by the most technical objections. Again, the double system of Law and Equity, each engaged in obstructing and supplementing the other, was, and still is in England, a very great abuse. The delay and uncertainty of law-proceedings arose very much from the same sources, while the expense of a suit was traceable, not only to the causes just mentioned, but also to the fact, that the client had always to pay two different sets of professional men, each of whom had to be highly remunerated, and neither of whom was competent to conduct the cause by himself. Now as Indian procedure is exclusively governed by statute, none of these evils would arise from the extension of English law to the Mofussil.

No doubt many substantive principles of English law are objectionable in themselves. For instance, the highly artificial system of real property law and conveyancing ; the distinctions between freeholds and leaseholds, between deeds and simple contracts ; the twofold system of succession to property ; all these portions of our English law originated in causes which have long since ceased to operate even in England. No scheme for grafting English law upon Indian jurisprudence would be perfect, which did not prune away these excrescences. Such a task would be worthy of a great legislator, and when his work was accomplished, he would probably before long find the fruit of his labours transplanted to British soil. Perhaps India may be destined in some measure to repay England for the lives which have been lost in the East, by setting her the example of bolder and more enlightened legislation than Westminster has as yet attempted.

No doubt many difficulties might be suggested as to the mode in which English law could be reconciled with Native religion, and as to the hardship resulting to vested rights.

But neither of these difficulties are of much weight. For instance, a Hindú who elected to be bound by English law should not be allowed to dismiss his wife except by the legal process of divorce, nor to marry another while she was alive and united to him. But the marriage ceremony would be performed, and its validity decided according to the rules of his own religion. So a Hindú adoption has at once a religious and a civil aspect. For religious purposes it would remain. For civil purposes it would cease. An anglicised Hindú who adopted, would have a person to perform his funeral ceremonies, and would, no doubt, obtain all the privileges in the other world which an adoption has hitherto procured. But his adopted son would be in exactly the same position as a person adopted by an Englishman or a Muḥammadan, and would possess no right of succession to his property. On the other hand no injustice would be done to him, as his adoptive father might provide for him amply by settlement or will, and the friends of the boy could always make it a condition precedent to his adoption, that such a provision should be made.

Again, with regard to vested interests, no insuperable obstacles to a fair arrangement would arise. To take the two last instances. A Native, who had already a plurality of wives, would continue to be their lawful husband, and would remain liable for their maintenance. A son, adopted previously to the change of legal status, would be treated to all intents and purposes as if legitimately born*(a)*. One of several undivided brothers abandoning the Native law, would be dealt with exactly in the same manner as a partner quitting his firm. He would have to take his own share by division, and would (in the absence of a special agreement to

(*a*) Except, of course, in the case of a son being subsequently born to his adoptive father, when the adopted would only take one-fourth of the share of the natural-born son. See *Regular Appeal No.* 51 *of* 1861, 1 Mad. H. C. Rep. 45.

the contrary) remain personally liable for all family-debts contracted before division. Where the person adopting English law had undivided sons, they should be allowed a fixed period to signify their dissent, and to demand their share of the family property. If no dissent was signified within the specified time, then their status should be the same as that of the father. After-born sons would, of course, be allowed no option. In all cases, change of status should be formally registered, and publicly announced, and when once made should be absolute and irrevocable.

Little need be said upon the fourth rule. (See ante, p. 4) The Codes of Civil and Criminal Procedure, which have been passed within the last four years, have placed the practice of our Courts upon a footing which, for simplicity, cheapness, expedition, and adaptation to the discovery of truth, seems to me to be very far in advance of the system which prevails in England. The Penal Code too, though in some respects deformed by overlegislation, is on the whole a wonderful monument of industry and accuracy, and of language at once simple and clear. Under the influence of these improvements, we no longer witness such grave comedies as that of a muftí, first acquitting a prisoner because the only evidence against him was a single woman, and then joining in his conviction, on the hypothesis that the single woman might have been two men.

Much however still remains to be done. For instance, our whole testamentary procedure requires to be remodelled. It is inconceivable why the Letters Patent constituting the new High Courts should have swept away the Common Law and Equity Procedure, and have retained the old Ecclesiastical Procedure, which is infinitely worse than the other two. Not only is that system cumbrous and complicated in itself, and framed with reference to a secret mode of taking evi-

dence which has long since been abolished, but it is singularly difficult really to ascertain what it is. The works upon Ecclesiastical Law are not in general written by lawyers, and are so faulty in their arrangement that the point which is wanted can hardly ever be found. What makes this blunder in the Letters Patent the more inexplicable is, that a new and simple system of procedure had been lately introduced into the Probate Court in London, which could with the greatest ease have been transferred to the Indian Courts. As it is we are left to grope through the Cimmerian gloom of Oughton and Gibson, Rogers and Burns, and are denied the benefit of the light which streams from that judicial luminary Sir Cresswell Cresswell. The mind is still perplexed with libels, condidits, and citations, personal answers, negative issues and responsive allegations. A man who in the year 1863 wants to say that John Brown made his will a month ago, is forced to use the following piece of monkish jargon.

A business of proving in solemn form of law the last will and testament of John Brown, prosecuted by William Brown his son against James Brown the father of the deceased.

"On which day Thompson in the name and as the lawful Proctor of the said William Brown and under that denomination exhibited the true and original last will and testament of the said John Brown deceased, bearing date, &c. &c., and by all better and more effectual ways, means and methods, and to all intents and purposes in the law whatsoever, which may be most beneficial and effectual for his said party, said, alleged, and in law articulately propounded as follows, to wit, &c. &c. And this was and is true, and so much the said James Brown, the other party in this cause, doth know, or hath heard, or in his conscience believes, and hath confessed to be true; and the party proponent doth allege and propound every thing in this and the subsequent articles of this allegation contained, jointly and severally."

Another point of great importance is, that every legislative improvement, which is introduced in England, should be extended to India, if suitable. This is more especially necessary in regard to mercantile law. British merchants ought to be able to feel that their obligations in every part of Her Majesty's dominions are governed by the same principles; and it is essential to them that their counsel in London should be able to advise them with as much safety as to the validity of a contract made in Calcutta, as if it had been made in Liverpool. Yet many most important statutes, such as the Bills of Lading Amendment Act, and the Mercantile Law Amendment Act, have never been extended to India. In all such cases the law of the two countries begins to diverge, and the decisions of the English Courts cease to be guides for the Indian Judges. Probably much of this shortcoming arose from the severe labour which was cast upon Sir Barnes Peacock during his last years of office, in carrying through the three great Codes of 1859 and 1860. His successor has got a comparatively clear field before him, and we may well hope that the great reputation which Mr. H. S. Maine has already gained as a scientific jurist, will be eclipsed by his achievements in practical legislation.

August 1863. J. D. M.

Contributions to the Botany of Southern India by CAPTAIN R. H. BEDDOME, *Officiating Conservator of Forests, with Plates.*

ANONACEÆ.

(New Genus) ATRUTEGIA (tribe Saccopetaleæ)

Generic Character—Sepals 3 small, petals 6, in 2 series æstivation valvate, outer ones nearly twice the size of the inner ones, ovate acuminated, nerved; inner ones obovate acuminate firmly cohering by their margins, torus subglobose, stamens indefinite, anthers sessile, connectivum large attenuated into a blunt point—ovaries numerous oblong, style long attenuated, stigma 2 clawed, ovule erect, solitary.

ATRUTEGIA WYNADENSIS (R. H. B.) an erect shrub, or small tree; leaves oblong acuminated, glabrous on both sides, 8 to 11 inches long by 3 inches broad, petiole 6 lines long, flowers axillary solitary, or solitary from small knots on the trunk, sepals rounded puberulous, outer petal puberulous on both sides, inner ones puberulous on the outside and glabrous within, but furnished on the inner face with a deep hairy channel round the upper portion torus ovary and style hairy (Plate No. 1.)

Rare. Wynad, in moist woods, 3,500 *feet elevation, in flower in January.*

"Unona pannosa" (Dalzell) is common in the Wynad and on the A'naimalais. "Cyathocalyx Zeylanicus" (Champion) not uncommon in moist woods on the A'naimalais "Guatteria coffeoides" (Hooker and Thomson), or a species closely allied to it, is a common tree in the Wynad: it yields a valuable fibre, as also does Unona pannosa. Orophea erythrocarpa, described by me from the A'naimalais in a former number of the Journal, I have also found in the Wynad.

MENISPERMACEÆ.

COCCULUS LAURIFOLIUS (D. C. I. 530) *A'naimalais up to 6,000 feet.*

SANYDACEÆ.

CASEARIA CORIACEA, (Thwaites Enum. Ceylon pl.), *on the higher ranges of the A'naimalais.*

TILIACEÆ.

GREWIA (LINN.)

GREWIA ACUMINATA, (R. H. B.) a small tree glabrous leaves oblong with a very long acumen, 4 to 6 inches long, by 2 inches broad, quite entire, glabrous, petioles 3 lines long, stipules small subulate, peduncles very short lateral or axillary 2-5 flowered, bracteoles minutes, sepals cinereo-pubescent on the outside. *Wynad (Devallicottah).*

OLACACEÆ.

MIQUELIA MEISN.

MIQUELIA DENTATA, R. H. B. [Jenkinsia Wallich] Diœcious. Twining glabrous leaves broad ovate acuminate with a slightly cordate base deeply and irregularly toothed to the apex about 8 inches long by 4 inches broad, pedicels lateral bearing 1-5 slender umbelliferous pedicels perianth monopetalous, tube short, segments 4, male stamens 4 joined at the base and alternate with the segments of the corol, rudiment of ovary bifid female no rudiment of stamens, fruit oblong obovate on a short pedicel slightly puberulous. *A'naimalais, 2,000 feet.*

ANACOLOSA (BLUME.)

ANACOLOSA DENSIFLORA, (R. H. B.) Arboreous young branches terete, leaves alternate glabrous and shining short petioled oblong rounded at the base, attenuated into an obsolete point at the apex pale green 4 to 6 inches long by

$1\frac{1}{2}$ to 2 broad, petioles 3 lines long, flowers fascicled in dense axillary, heads, from small knobs on the branches, pedicels 7 to 20 about 3 lines long, flowers fragrant pale yellow petals densely villous on the inside, reflexed at the apex, filaments very short glabrous or furnished with a few hairs disk lobed petals about 3 lines long by 1 line broad. (Plate No. 2.)

Rare. A lofty tree, dense moist woods on the A'naimalais at 2,000 *feet elevations.*

AURANTIACEÆ.

Clausena Indica, (Oliver Mon. on Aurantiaceæ Linn. Journal) [which is "Bergera nitida" of Thwaites Enum. and "Piptostylis Indica," Dalzell in Hooker's Journal of Botany, Vol. VIII, p. 33.] *Common on the A'naimalais.*

Paramignya armata, (Oliver l. c.) [which is "Anthromiscus armatus" of Thw. En.] *A'naimalais, Wynad, Travancore hills.*

GUTTIFERÆ.

Calophyllum bracteatum, (Thw. En. Cey. pl. p. 51.) This is the poon spar tree common in all our western ghát forests, erroneously entered in catalogues as "C. angustifolium."

SAPINDACEÆ.

Nephelium (Linn.)

Nephelium stipulaceum, (R. H. B.) Arboreous polygamo-diœcious leaves abruptly pinnate, leaflets 2-3 pair subopp. the lower pair at the base of the petiole small obliquely curved, and stipule-like, others oblong very obtusely pointed, slightly attenuated at the base glabrous, panicles axillary and terminal, together with the calyx and ovary slightly pilose; stamens 6-8; ovary 2 lobed 2 celled stigma 2 lobed, fruit oval, the size of a large gooseberry

densely covered with weak prickles, seed oblong half covered with the succulent aril, testa brown, cotyledons very large fleshy—leaves 6-10 inches long, leaflets 3-4 inches long by 2-3 broad. *A middling-sized tree, A'naimalais and Wynad, up to* 3,500 *feet elevation.*

NEPHELIUM ERECTUM, (Thw. En. p. 57). *A'naimalais and Wynad.*

HARPULLIA IMBRICATA, (Thw. En. p. 56) [" Otonychium" Blume, " Streptostigma" Thw.] *A'naimalai hills, moist woods,* 2,000 *feet. Common.*

MELIACEÆ.

LANSIUM (RUMPH)

LANSIUM A'NAIMALAIENSE, (R. H. B.) Arboreous leaves unequally pinnate 6-9 inches long; leaflets 3-5 elliptic with a blunt acumination attenuated at the base entire glabrous 3 to 4 inches long, 1½ to 2 broad, flowers in axillary spikes calyx 5 cleft segments imbricate, petals 5 subglobose imbricate staminal tube obsoletely 10 cleft; anthers 10, two celled alternately shorter ovary strigose sessile 3 lobed, 3 celled cells, 2 ovuled style obsolete, stigma obtusely 3 lobed fruit size of a large grape, 2 celled 2 seeded; seed arillate embryo peritropal, radicle pubescent. (Plate No. 4.) *A'naimalais moist woods* 2,000 *feet (" Nemedra Nimmonii" Dalzell Bombay Flora ? ?)*

BEDDOMEA SARMENTOSA, (Hooker f.) *Wynad, Nilgiris and A'naimalais.* (Plate No. 3.)

DYSOXYLON (BLUME.) There is a large undescribed tree of this genus on the A'naimalais, (moist forest 2,000 feet) I have however only procured it in fruit. " Fruit round a little larger than a billiard ball, yellow when ripe covered all over with rough tubercles, slightly attenuated near the petiole, 3-4 celled 3-4 seeded. Seed solitary in each cell,

attached by their whole inner face to the central placenta, bluntly three sided, hilum occupying the whole of one face testa thick deep reddish brown, radicle inverse near the apex between the large fleshy green cotyledons.

MILNEA APIOCARPA, (Thw. En. p. 60.) *A'naimalais.*

AMPELIDEÆ.

CISSUS (LINN.)

CISSUS ANAIMALAIENSIS (R. H. B.) Whole plant glabrous, leaves simple and trifoliate, common petiole 1 to 2 inches long, leaflets on short glandular petioles, ovate lanceolate with a very long acumination sharply serrated, lateral leaflets very unequal sided with an oblique base, 3½ to 4 inches long by 2 inches broad beneath prominently reticulated tendril many cleft furnished with minute stipules, inflorescence loosely cymose, pedicels shorter than the leaves. *A'naimalais,* 5,000 *feet elevation.*

BALSAMINACEÆ.

IMPATIENS (LINN.) (Sec. Scapigeræ Hooker and Thomson.)

IMPATIENS DENISONII, (R. H. B.) leaves ovate cordate with bristly crenatures furnished above with numerous weak hairs below glabrous, petioles generally shorter than the leaves—scapes much longer than the leaves flowers numerous, bracts small ovate, pedicels 1 inch long, sepals small ovate vexillum rather large broadly ovate vaulted, alæ with three broad spreading lobes, with a dense tuft of petaloid hairs above the conjunction of the lobes and furnished with a long filiform appendage which is entirely hid in the spur and extends its whole length—spur very long recurved capsule glabrous seeds numerous small. (Plate No. 5.) *On rocks and trees—Western slopes of the Nílagiris,* 3,000 *to nearly* 5,000 *feet elevation, very abundant.*

IMPATIENS ORCHIOIDES, (R. H. B.) Leaves ovate to orbicular with a deep cordate base, obtuse, bristly crenate

furnished above with numerous weak hairs below nearly glabrous very long petioled scapes about the length of the leaves 6-10, flowered at the apex, bracts ovate pedicels ½ to ¾ of an inch long, sepals small ovate, vexillum ovate, alæ with the lower petals produced into two long linear lobes, labellum ovate saccate without a spur, capsule glabrous seeds numerous brown minutely scrobiculate—flowers brownish-red. *Koondahs on trees in moist woods, 7,000 feet elevation, rare* (Plate No. 6).

CELASTRACEÆ.

GLYPTOPETALUM ZEYLANICUM, (Thw. En. Cey. pl. page 73.) *Common on the A'naimalais,* 2,000 *feet elevation.*

RHAMNACEÆ.

ZIZYPHUS WYNADENSIS, (R. H. B.) Arboreous unarmed leaves oblong to lanceolate attenuated at both ends acuminate shortly petioled glabrous and shining above, penninerved, beneath very finely reticulated and fulvo-pubescent on the nerves—young shoots and inflorescence fulvo-pubescent; flowers in dense axillary fascicles about the length of the petioles, styles 2, ovary 2 celled, disk hairy, petals 3 lobed sepals furnished with a prominent ridge down the centre of their inner face, anthers prolonged into a long connectivum. (Plate No. 7). *Wynád about Devallikottai, in moist woods, a lofty tree.*

CHAILLETIACEÆ.

MOACURRA GELONIOIDES, (Roxb.) *A'naimalais, up to* 4,000 *feet.*

LEGUMINOSÆ.

CROTALARIA ELEGANS, (R. H. B. Pulney Cat.) *A'naimalais, Travancore hills.*

CROTALARIA LUNATA, (R. H. B. l. c.) *A'naimalais.*

CROTALARIA ACICULARIS, (Hœrn.) *A'naimalais,* 3,000 *feet.*

CROTALARIA DUBIA, (Graham). *A'naimalais teak-forests.*

CROTALARIA HUMIFUSA, (Graham). *A'naimalais,* 5,000 *feet elevation.*

CROTALARIA PRIESTLEYOIDES, (Benth. in Hook. Herb.) *A'naimalais,* 5,000 *feet elevation.*

CROTALARIA MULTIFLORA, (Benth.). *A'naimalais,* 5000 *feet.*

CROTALARIA TRIQUETRA, (Dalzell). *A'naimalais,* 3,000 *to* 5,000 *feet.*

SMITHIA SETULOSA, (Dalzell). *Wynád.*

SMITHIA CAPITATA, (Dalzell). *A'naimalais, Coimbatore hills.*

DESMODIUM ORMOCARPOIDES, (D C.) *A'naimalai teak forests.*

DESMODIUM PODACARPUM, var. Gardneri. *A'naimalais, in moist woods,* (2,000 *feet.*)

DESMODIUM BOTULOIDES, (R. H. B.) branched from the base, stems angled adpresso-sericeous, leaves oblong acuminate glabrous above copiously adpresso-sericeous and pale beneath, 3½ to 4 inches long by 1½ to 1¾ broad, 2 large scariose lanceolate acuminate stipules at the base of the petiole—2 filiform stipels on the petiole a little below the leaf, racemes terminal minutely glandular pubescent pedicels short 2-3 together from lanceolate bracts, pedicels and calyx strigose, calyx 2 lipped upper lip ovate very slightly bifid at the apex lower deeply 3 cleft, legume linear 4 to 5 inches long glanduloso—hispid, 6-8 articulated, notched on both sutures, articulations long sub-elliptic. *A'naimalais, in moist woods, up to* 4000 *feet.*

VIGNA WIGHTII, (Benth.) *A'namalais, Wynád, Common.*

MILLETIA. I have two new species, one from the Wynád

and one from the A'naimalais: they are not perfect enough for description.

FLEMINGIA INVOLUCRATA, (Wall.) *Foot of the Karkur ghát, (Wynád).*

PTEROCARPUS SANTALINUS, (Linn.) (This has been erroneously described). Leaflets always 3 lower ones alternate or sub-opp., broadly ovate or orbicular deeply emarginate young parts and the under surface of the leaves slightly sericeous—inflorescence axillary or terminal racemed or panicled calyx slightly puberulous, stamens equally diadelphus. *North Arcot and Cuddapah hills. I have never found the tree on the Western side of our Presidency.*

BAUHINIA. I have a fine new species, a gigantic creeper with scarlet flowers, from the foot of the Karkur ghát. My specimens are not perfect enough for description, as I could only procure a few fallen flowers and some leaves.

PITHECOLOBIUM SUBCORIACEUM, (Thw. En. p. 100). *A'naimalais on the higher ranges.*

PITHECOLOBIUM GRACILE, (R. H. B.) Sec. Clypearia Benth.). Shrubby, leaves bipinnate, pinnæ 1 pair, leaflets membranaceous 3 pair shining short petioled, ovate lanceolate with a very long acumination, petioles nerves of the leaves and inflorescence minutely puberulous, 1 gland in the centre of the common petiole, secondary petioles with a gland near the base and one about a quarter of an inch below each pair of leaflets—panicles terminal many flowered flowers in small globose heads bracteated—legumes spirally twisted margin sinuate, about 4 seeded. *Wynád, moist woods on the Karkur gháts.*

CHRYSOBALANACEÆ.

ENTOSIPHON (R. H. B.) new genus.

Generic character: calyx tube infundibuliform, divisions 5 imbricate pilose lanceolate acuminate sub-equal, corol petals

5 ovate pointed imbricate equal a little shorter than the calycine lobes, inserted into the jaws of the calyx, stamen tube lining the inside of the calyx and connate with it to its base, densely hairy inside, fertile stamens 12-15 all on the side near the ovary, filaments glabrous twice the length of the calyx induplicate in æstivation anthers 2 celled bursting longitudinally, staminodes 5-9 very short pointed or rarely bidentate, ovary connate with the tube near the summit very hairy 2 celled, cells 1 ovuled ovules erect, style lateral glabrous except at the base, attenuated at the apex leaves glabrous lanceolate acuminated at both ends entire slightly undulate 8-9 inches long by 3 inches broad petiole 5 lines long 2 glands at the apex at its conjunction with the leaf, racemes puberulous shorter than the leaves, flowers subsessile 3 bracteated, outer bract large ovate lanceolate puberulous, 2 inner ones linear lanceolate.

ENTOSIPHON INDICUS, (R. H. B.) *Wynád, a tree* 3,000 *feet elevation in moist woods.* (Plate No. 8).

MELASTOMACEÆ.

OSBECKIA LINN.

OSBECKIA GRACILIS, (R. H. B.) shrubby erect slender stems nearly glabrous leaves distant narrow lanceolate acuminate slightly crenated 3 nerved; on both sides a few adpressed bristles; above much wringled when dry, 2½ to 3 inches long by ½ inch broad; petioles 1½ to 2 lines long, peduncles terminal or axillary 2-3 flowered, flowers large on short pedicels, calyx tube covered with a few distant bristles segments 5 deciduous ciliate and each terminating with a tuft of bristles, petals 4 obovate, stamens 8 anthers not beaked, style straight.

Sisparah ghát (Nílagiris).

OSBECKIA RETICULATA, (R. H. B.) a shrub on the higher ranges of the A'naimalais. (Description mislaid).

PACHYCENTRIA, (Blume). There is a fine new species grows on Rhododendron arboreum on the higher ranges of the A'naimalais: my specimens are not perfect enough for description.

SONERILA, Roxb.

SONERILA TENELLA, (R. H. B.) erect, leaves opp. 1-1¼ inch long 7-8 lines broad, ovate pointed finely serrate 3-5 nerved sometimes oblique and unequal at the base, above rather distantly covered with long whitish hairs, below nearly glabrous, lower pair distant petioles 4-8 lines long channelled peduncles 1-3 flowered glabrous anthers cordate acuminate capsule glabrous.

A'naimalais 3,500 *feet elevation (allied to S. Arnottiana. Thwaites.)*

SONERILA ACAULIS, (R. H. B.) leaves radicle ovate with a cordate base slightly crenate with bristles in the crenatures above furnished with distant thick white hairs which rise from white spots, below frosted with a few hairs on the nerves at length glabrous on both sides 2½ to 7 inches long by 1¼ to 5 broad petioles long glabrous, scapes the length of the leaves with 6-20 recurved short pedicels near the apex calycine segments small acute pedicels and calyx furnished with a few gland tipped hairs petals oblong to ovate acuminate, anthers narrow cordate yellow, style length of the stamens, stigma obtuse papillose, flowers pink.

A'naimalais moist rocks, 3,000 *feet.*

Sonerila rotundifolia, (R. H. B. Madras Journal) *is also found in the Wynád.*

MYRTACEÆ.

EUGENIA LINN.

EUGENIA GRACILIS, (R. H. B.) arboreous young shoots puberulous leaves petioled lanceolate acuminate of both ends glabrous shining above, 3-4 inches long by 1 to 1¼ broad,

petioles 4 lines long, pedicels long slender (12-16 lines long) axillary solitary, or from short peduncles which are axillary or supra-axillary, pedicels and calyx puberulous, 2 small bracts at base of calyx, petals 4 ciliate twice as long as the lobes of the calyx white, ovary 2 celled ovules 6-9, fruit oblong about the size of a sparrow's egg.

A small tree: *A'naimalais, banks of streams,* 3,000 *to* 4,000 *feet.*

EUGENIA WYNADENSIS (R.H.B.): leaves oblong lanceolate with a long blunt acumination, when old quite glabrous on both sides, young leaves and ramali and inflorescence densely fulvo-tomentose, peduncles supra axillary much longer than the petioles; calycine lobes 4 lanceolate acuminate a little longer than the corol. bracts 2 linear much longer than the sepals, leaves 3-3½ inches long by 1-1¼ broad, petioles 3-4 lines long peduncles 6 lines long.

Wynád in moist woods, 3,500 *feet elevation, a shrub or small tree.*

CUCURBITACEÆ.

TRICHOSANTHES LINN.

TRICHOSANTHES ANAIMALAIENSIS (R. H. B.) : leaves 3-5 lobed very scabrous above, pubescent beneath, irregularly and deeply serrated; 4-5 inches each way, female flowers racemed furnished with large glandular lacinate bracts, sometimes solitary or 2 and then axillary with a lanceolate bract, stigma 3-4 cleft, sterile filaments 3 towards the base of the tube. Male flowers with a larger and more lacinate calyx, filaments 3 (rarely 4) distinct inserted on the gibbous part of the tube, anthers united corol very hairy on the inside, tendrils 2-3 cleft, flowers white berry globose.

A'naimalais, moist woods up to 4,000 *feet.*

BEGONIACEÆ.

BEGONIA LINN.

BEGONIA MINIMA, (R. H. B.) (Section Diploclinium.) Leaves radicle rhomboid ovate to cordate acuminate bristly crenate long petioled furnished above with a few weak hairs beneath glabrous pellucid dotted; scapes longer than the leaves, with one leaf near the base, peduncles dichotomous or alternate bracteated, several flowered, male flowers 4 petaled, 2 inner petals narrower than the outer ones, female flowers 5 petaled, capsule 3 winged. (Plate No. 15.)

On moist rocks Devallicottah (Wynád) in moist woods.

BEGONIA RENIFORMIS, (R. H. B. Madras Journal). As the name " reniformis" has already been given to a species of Begonia, this should be altered to " B: Anaimalaiensis."

CRASSULACEÆ.

KALANCHOE RITCHIEANA (Dalzell) *on moist rocks, A'naimalais,* 8,000 *feet elevation.*

LORANTHACEÆ.

LORANTHUS CLEGHORNII, (R. H. B.) glabrous, leaves opp. ovate very obscurely nerved coriaceous 2½-3½ inches long by 1½ inch broad, racemes axillary or terminal, many flowered, pedicels very short with a small bract embracing the calyx, calyx not exceeding the ovary entire or nearly so, corolla straight glabrous, ventricose at the base equally 4 cleft to below the middle, segments cuneate linear, berry oblong, flower deep dull orange colour.

On Rhododendron arboreum A'naimalais higher ranges.

RUBIACEÆ.

ACRANTHERA ZEYLANICA, (Arnt. in Ann. Nat. His. III, 21.) *Moist woods on the A'naimalais,* 4,000 *feet elevation.*

ARGOSTEMMA COURTALLENSE, (Wight) (A. connatum Dalzell) : *common on the A'naimalais.*

ARGOSTEMMA VERTICELLATA, (Wall) (A. glaberrimum Dalzell) *A'naimalais* : *rare.*

OPHIORRHIZA LINN.

OPHIORRHIZA FALCATA, (R. H. B.) Erect every where glabrous leaves lanceolate tapering at both ends acuminate, very pale beneath stipules large subulate to triangular, cymes axillary and terminal long peduncled with about 3 reflexed second divisions, 2 of which are generally 2 parted bracts large falcate, calyx minute, flower buds angled, corol gibbous at the base and contracted below the segments glabrous outside, hairy in the jaws above the anthers.

A'naimalais moist woods 3,000 to 4,000 *feet elevation.*

HEDYOTIS GLABELLA, (Heyne in Herb. Hooker) *A'naimalai teak forests.*

HEDYOTIS BUXIFOLIA, (R. H. B.) Shrub, glabrous branches terete, leaves short petioled 4-6 lines long 3 lines broad, broad ovate shining glabrous, nerves obscure, very coriaceous, margins recurved stipules broad sheathing connate at the base, divided into filiform teeth, ciliate on the margins and with a line of hairs down the centre, calyx cup shaped with 4 erect teeth slightly ciliate, corol villous in the mouth and on the segments, filaments included or exserted, anthers oblong style longly exserted, peduncles terminal or in the upper axils 3 lines long 3 flowered flowers nearly sessile bracts filiform ciliate, capsule splitting into 2 bony cocci seeds numerous. *A'naimalais, higher ranges.*

HEDYOTIS HIRSUTISSIMA, (R. H. B.) shrubby leaves 1½ to 2 inches long short petd. ovate lanceolate, nerves numerous prominent, mucronately acuminate, both sides of the leaves and panicles densely and adpressedly hirsute with yellow-

ish hirs, stipules ovate, pectinately pinnatifid very hairy, panicles axillary corymbiform few flowered much shorter than the leaves, bracts linear leaf like, calyx deeply 4 cleft segments lanceolate acuminate very hairy, corol tube long very hairy outside and bearded within, seeds numerous.

Kundas. (Nílagiri) 7,000 *feet elevation in moist woods.*

GRUMILEA LONGIFOLIA, (R. H. B.) *A shrub A'naimalais,* 3,000 *feet (description mislaid).*

SERISSA Comm.

SERISSA FRAGRANS, (R. H. B.) Shrub 10-12 feet, leaves glabrous oblong or oblong lanceolate acuminate attenuated at the base, 3-4 inches long by 1¼ to 2 inches broad petioles 3 lines long peduncles terminal very short 1-5 flowered, pedicels 2 lines long flowers tetramerous calyx slightly 4 toothed corol infundibuliform minutely papillose outside villous within the tube, fruit oblong, flowers white fragrant (the outer portion of the lobes of the corol of Serissa is of a thin membranaceous text and is folded over the thick fleshy portion in the bud, the edges of the fleshly part being valvate) (Plate No. 9).

Western slopes of Nílagiris. Rare.

SERISSA GLOMERATA, ("Serissa Gardneri" Thw., "Dysodidendron glomeratum" Gardn., "Saprosma Indica" Dalzell) *very common in moist forests western side of the Presidency.*

SERISSA WIGHTII, (Lasianthus fœtens" Wight. "Dysodidendron Wightii" Gardner) *common in moist woods, A'naimalais, Nílagiris.*

VALERIANACEÆ.

VALERIANA NECK.

VALERIANA MICROPHYLLA, (R. H. B.). Stem erect striated nearly glabrous, tufts of hair at the insertion of the cauline leaves and the divisions of the corymb radicle leaves on

longish petioles pinnate below, pinnatifid at the apex, leaflets slightly hairy and ciliate, at length glabrous narrow linear to filiform ¼ to ½ inch long by 1 to 2 lines broad often bearing small linear auricles at the base cauline leaves conform to the radicle, but sessile and stem clasping, corymb small compact. *A'naimalais,* 6,000-8,000 *feet.*

MYRSINACEÆ.

Ardisia Linn.

Ardisia serratifolia, (R. H. B.). Shrubby, leaves short petioled narrow lanceolate attenuated at both ends, long acuminated very sharply serrated 5 to 8 inches long, 1 to 2 inches broad, nearly glabrous above—young branches petioles and under surface of the leaves rufo-tomentose peduncles axillary pedicels 2-5 slender ½ inch long glabrous, calyx pubescent petals gland dotted, style long slender.

A'naimalais, moist woods up to 3,000 *feet.*

Ebenaceæ.

Diospyros insignis, (Thw. En. p. 180). *Moist woods on the A'naimalais,* 2,000 *feet.*

SYMPLOCEÆ.

Symplocos Jacq.

Symplocos uniflora, (R. H. B.) arboreous, glabrous leaves coriaceous short petioled ovate lanceolate 1 to 1½ inch long, ¾ to 1 inch broad, serrulate glabrous shining, peduncles axillary solitary from ½ as long to nearly as long as the leaves slender, berry cylindric 3 celled.

A'naimalais, a small tree, 5,000 *feet.*

Symplocos rosea, (R. H. B.) Shrubby, leaves oblong to lanceolate slightly attenuated at the base and with a longish sharp acumen, mucronately serrulated glabrous 4 to 6 inches long by 1½ to 2½ broad petioles 4 lines long, young branches petioles and inflorescence puberulous, racemes axillary longer

than the petioles, bracts bracteoles calyx and fruit puberulous, berry sub-cylindric 3 celled, flowers rose-coloured.

A'naimalais, moist woods, 2,000 *feet.*

ASCLEPIADACEÆ.

CEROPEGIA LINN.

CEROPEGIA MACULATA, (R. H. B.) root fibrous, twining stems terete glabrous maculate, leaves ovate acuminate maculate and minutely punctated glabrous, furnished with a minute gland on the lamina just above the insertion of the petiole 2½ to 3 inches long by 1½ to 2 inches broad, petioles very minutely pilose channelled 1 inch long; peduncles a little shorter than petioles glabrous pedicels umbelled 7-10 as long or longer than peduncles, sepals subulate corol dull greenish purple limb ⅓ of the whole, segments ciliated, exterior lobes of stam. cor. of the same length as the inner ones alternate with them and bifid to the base, follicles terete slender.

A'naimalais in moist woods 2,000 *to* 3,000 *feet.* In appearance much like C. candelabrum Linn (which is C. intermedia of Wight): the formation of the st. cor. is however very different.

CEROPEGIA ENSIFOLIA, (R. H. B.) root tuberous, stem twining glabrous, leaves very narrow linear tapering at the apex, mucronate, above a few adpressed hairs, below pale glabrous, 4-7 inches long by ¼ inch broad, very short petioled: peduncles axillary from ½ as long to nearly as long as the leaves, pubescent furnished with several ovate pointed bracts at the apex, umbelliferous, bearing several flowers on simple pedicels and a second peduncle which is again umbelliferous or sometimes much elongated and paniculate, pedicels pubescent, calycine lobes glabrous subulate half the length of the ventricose base of the glabrous corol, segments of corol as long or longer than the tube, exterior

lobes of st. cor. short emarginate ciliate, alternate with the inner long ligulate lobes, follicles long slender terete, flowers greenish white.

A'naimalais, hills, rocky places at 2,500 *to* 3,500 *feet elevation.*

Ceropegia fimbriifera, (R. H. B.) root tuberous, stem erect, minutely pubescent leaves sub-sessile narrow ensiform tapering to the apex minutely ciliated, above pubescent, beneath glabrous except on the midrib and minutely frosted, peduncles axillary short nearly glabrous about 4 flowered, flowers opening in succession, pedicels about as long as peduncles, furnished at the base with a few subulate bracts, calyx segments subulate acute ¼ length of corol tube, corol tube narrowed upwards (but not ventricose at the base) segments about the length of tube with tufts of numerous long purple gland tipped hairs between the segments, outer lobes of st. cor. short sharply bifid and ciliated, inner lobes long ligulate and adnate to the centre of the outer ones, follicles terete, flower tube greenish outside deep purple striated inside, segments pale greenish purple fringe deep purple leaves 5-6 inches long by 2-3 lines broad, ped. 6-8 lines long. (Plate No. 10.)

A'naimalai hills, rocky places, 3,000 *feet, rare.*

This is always a small erect plant in its wild state. Brought into a garden it becomes a creeper, the tufts of gland tipped hairs are concealed within the corol until the segments expand: they then hang down like a fringe round the apex of the tube.

Ceropegia gracilis, (R. H. B.) root fibrous, stems twining glabrous, leaves short petioled ovate elliptic acuminate minutely ciliate, above furnished with a few distant short hairs, minutely pellucid dotted, beneath shining glabrous except on the midrib, peduncles longer than the petioles 2-5

flowered flowers very large tube short ventricose at the base segments longer than the tube, very narrow at the middle broader upwards outer lobes of the st. cor. short deeply bifid ciliate with long fine hairs, inner lobes alternate with them distant long ligulate.

A'naimalais, moist woods, 4,000 *feet, rare, allied to* "*C. oculata*" *Hooker.*

CEROPEGIA OCULATA, (Hooker). *A'naimalais, moist woods* 2,000 *feet elevation, common.*

GENTIANACEÆ.

EXACUM MACRANTHUM, (Arnt) *Pulney hills and A'naimalais on the higher ranges.*

(I have a new species of Ophelia from the A'naimalais, but I have mislaid the description and have no specimens now by me.)

PODOSTEMACEÆ.

DICRÆA Pet. Th.

DICRÆA ALGÆOIDES, (R. H. B.) fronds greenish black, compressed algæoid, floriferous at the base leafless outer involucre composed of 3 thick fleshy leaves 2 of which are equal in size and one is very small involucel entire pellucid completely enveloping the flower, staminodes 3 the centre one attached to the antheriferous filament or rarely wanting anther cells unequal, sigmas 2 subulate entire reflexed, pedicel of the flower elongating in fruit capsule 1 celled 8 ribbed.

A'naimalai Hills, on rocks, in streams and rivers up to 3,000 *feet elevation.*

MNIOPSIS Mart.

MNIOPSIS SELAGINOIDES, (R. H. B.). Rhizome small scale like stems erect 1-3 inches high terete succulent, naked with long filiform leaves towards the apex, or densely covered

with thick hard triangular imbricated sheaths each of which is terminated with a long filiform leaf, leaves very caducous 2-6 inches long by ½ a line broad semiterete at the base, flattened upwards; flowers terminal solitary, involucre tubular, mouth 2 cleft, staminodes 2 stamens 3 monodelphous, stigmas 2 entire or 2-3 cleft, capsule smooth.

A'naimalai Hills, on rocks in beds of rivers, 1,500 *to* 3,000 *feet elevation.*

All the leaves of this species fall off long before the flowering season (December), but the scales or sheaths are persistent. The flowers are only on the apex of the stems furnished with these sheaths: the other filiform stems, which are destitute of scales, bear the same filiform leaves but no flowers.

ACANTHACEÆ.

STROBILANTHES, (Blume.)

STROBILANTHES ANDERSONII, (R. H. B.) shrubby 12 to 20 feet high, stems terete hirsute, leaves petioled ovate acuminate serrate, hirsutely pubescent on both sides, 4 to 9 inches long 2 to 4½ broad, petioles ½ to 2 inches long hirsute, peduncles axillary much shorter than the leaves flowers in dense bracteated heads, bracts large glabrous or slightly ciliated ovate obtuse calycine lobes narrow lanceolate ciliate corol glabrous large pale blue, stamens 4 unequal.

A'naimalais, moist woods, 5,500 *feet elevation.*

STROBILANTHES GRACILIS, (R. H. B.) shrub 18 feet high, stems terete glabrous, leaves sessile auricled at the base narrow lanceolate with a long acumination, attenuated towards the base, sharply serrated glabrous on both sides 4-6 inches long by 1-1½ broad panicles terminal or from the upper axils loose, many flowered glanduloso-puberulous flowers in distant pairs each furnished with a small lanceolate

bract, calycine lobes linear lanceolate, corol lilac, stamens 4 unequal, capsule attenuated at the base acute one-third longer than the calyx.

A'naimalais with the preceding.

STROBILANTHES WARRCENSIS, (Dalzell) *foot of Karkur ghát Wynád.*

PROTEACEÆ.

HELICIA Lour.

HELICIA NILAGIRICA, (R. H. B.) glabrous, leaves broad ovate acute attenuated at the base, coarsely and sharply dentate with large sinuses, except near the base, prominently reticulated, racemes densely flowered much shorter than the leaves, pedicels generally 2 flowered with a minute bract at the base of the pedicel, hypogynous glands connate into a 4 crenated cup.

Western slopes of Nílagiris, 3,000 *to* 4,000 *feet elevation* (Plate No. 11.)

URTICACEÆ.

LAPORTEA CRENULATA, (Gand) *A'naimalais, Wynád.*

PELLIONIA HEYNEANA, (Weddell) *A'naimalais, Wynád.*

PROCRIS LÆVIGATA, (Blume) *A'naimalais.*

LECANTHUS WIGHTII, (Wedd) (Elatostemma oppositifolium (Dalz) *A'naimalais.*

BOEHMERIA PLATYPHYLLA, (Don et Ham.) (splizgerbera maccrostacha Wight) *A'naimalais, Pulnies(a), Nílagiris.*

OREOCNIDE INTEGRIFOLIA, (Wedd) *A'naimalais.*

MOROCARPUS LONGIFOLIUS, (Blume) (Conocephalus niveus Wight) *A'naimalais.*

Gironniera reticulata (Thw. En. Cey. pl. 268) *A'naimalais.*

(*a*) பழனிமலைகள்.

HYRTANANDRA, Miquel.

(Memorialis Ham. Weddell) (Pouzolzia in part Wight.)

HYRTANANDRA MACROPHYLLA, (R. H. B.) erect stems very hairy-leaves opp. or rarely alternate 3-7 inches long short petioled, ovate to lanceolate mucronate, entire, covered on both sides with adpressed hairs more dense on the under side, upper side minutely dotted, stipules broad ovate acuminate; terminal floral leaves small bract like sessile ovate with a very broad base and a long acumination flowers sometimes also in the axils of the larger leaves, male flowers 4 petaled ciliate fruit 2 winged ciliate.

A'naimalais, 3,000 *feet elevation.*

SANTALACEÆ.

PYRULARIA WALLICHIANA, (D C. Prod. XIV, 629.)

Sphærocarya Wallichiana (Wight), Wynád and Coorg.

EUPHORBIACEÆ.

CLAOXYLON LONGIFOLIUM ? (Baillon) *A'naimalais.*

CLEIDION JAVANICUM, (Blume) *Tetraglossa (Beddome, Madras Journal) A'naimalais, moist woods,* 2,000 *feet,* (Plate No. 14.)

CROTON. I have a new species, a small tree from the Nallamalais, but my specimens are too imperfect for description.

CHÆTOCARPUS CASTANOCARPUS, (Thw. En. 275) *A'naimalais.*

DIMORPHOCALYX GLABELLUS, (Thw. En. 278) *A'naimalais, moist woods,* 2,000 *feet,* (Plate No. 13.)

DESMOSTEMON ZEYLANICUS, (Thw. l.c.) *A'naimalais, moist woods,* 2,000 *feet,* (Plate No. 12.)

AGROSTISTACHYS INDICA, (Dalzell) *A'naimalais and Wynád up to* 4,000 *feet.*

CYCLOSTEMON ZEYLANICUM, (Baillon.)

(Sphragidia Zeylanica " Thw. " Laneasagum" (Beddome, Madras Journal) A'naimalais, moist woods, 2,000 *feet.*

SCYTAMACEÆ.

AMOMUM LINN.

AMOMUM PIERARDIOIDES, (R. H. B.) roots furnished with long runners just below the surface of the soil, stems erect 3 to 5 feet high glabrous, leaves oblongo-lanceolate acuminate glabrous above minutely silvery seriaceous beneath petioles 4 to 6 inches long glabrous deeply channelled, sheaths ending in an obsolete ligula. spikes small 3 flowered scarcely peduncled rising from the runners at some distance from the stem ¾ hid in the earth so that the flowers only appear, outer bracts broad ovate, inner ones narrow lanceolate marcescent, calyx spathaceous opening on one side only sharply toothed, exterior border of the corol of 3 broad very membranaceous segments white, the superior segments ending in a horn-like process, lip very broad spreading crumpled sub-entire or slightly 3 lobed, middle lobe emarginate white with a streak of red and yelow down the centre, furnished with 2 flat spurs at the base which are slightly toothed and ciliate, filament nearly as long as the anther (½ an inch) crest of anther broad semilunar entire, stigma wedge shaped with a ciliate mouth scales of the germ 2 (1 inch long) truncated and fluted to receive the stigma, rarely 2 extra short apiculate ones are present capsule red 3 valved with nine shallow furrows 3 celled.

A'naimalais, moist forests, 2,000 *feet; fruit almost exactly like that of " Pierardia macrostachys."*

Allied to Amomum pulchellum, Thw. En. p. 318, and also to A. maximum of Roxb.

AMOMUM DEALBATUM, (Roxb.). *A'naimalais with the preceding.*

AMOMUM MURICATUM (R. H. B.). 3-5 feet high, leaves broad-lanceolate, almost sessile from the apex of their sheaths which end in an entire ligula, and are furnished with a knob-like gland at the base of the very short petiol leaves deep green shining, glabrous on both sides 12 inches long 4 inches broad, spikes (at first appearing as a globular head) short peduncled, radical, lower bracts small, pink, embracing the peduncle, upper ones crumpled turning brown before the flowers expand, calyx double, the outer one tubular, shorter than the inner, 2 cleft at apex, inner one 3 cleft; exterior segments of corol white to yellowish, lateral ones narrow, superior broad-ovate, not ending in a horn, lip deeply 3 parted lower lobe protruded and emarginate, 2 spurred at the base, yellow with a broad streak of red spots filament longish broad more than twice the length of the anther, anther-crest semilunar, very large, entire, yellow; scales of the germ 2 short and thick, the stigma rising up between them : capsule globular pink-coloured size of a green-gage, concave at the top, beset with numerous stout prickles.

A'naimalais : moist forests, 2,000 *to* 3,000 *feet.*

Telugu Spells, translated by C. P. BROWN, ESQ., *late of the Madras Civil Service.*

[The Editor is indebted to the Deputy Registrar of the High Court of Madras, Appellate side, for the following translations, which were made by Mr. C. P. Brown, late Telugu Translator to Government, while he was Registrar of the Madras Sadr Court. The translations were made from two Telugu documents, which were referred to in the evidence of the prosecutor in a criminal case, F. 'A. No. 1435 of 1839, No. 22 of the Cuddapah Calendar for the first Sessions of 1839, and sent up to the Faujdári 'Adálat in return to their precept of the 5th August 1839. The prisoner appears to have been indicted for the murder of a girl named Yenkatasubbammá, whom he had enticed into his house and killed with a view of using her corpse as an ingredient in one of the following incantations. The murder took place on a Saturday evening and the body was found next day in a pagoda near the prisoner's house.]

TRANSLATION of book No. 3.

(This is a set of magic spells written in Sanskrit.)

"Salutation to the Supreme Brahma! Salutation to Gaṇeça! Om*(a)*! I salute Bhagavatí, who ruleth all magic arts: who draweth all the gods: and all the ghosts: all, all destruction. Swiftly seize on him, O thou who workest all things!"*(b)*

"O great Devadatta, O greatest of gods draw him. Mighty sprite (yakshiṇi) draw him. O thou science that sustainest Magic, draw him! Great Káli! Om! húm! mighty Káli of fevers! Om! Durgá, mighty Káli! Káli, Káli, O Káli jham Káli [here follow some unintelligible syllables] Karáli, Marali, strike strike him! [the next syllables are not in Sanscrit but in the Telugu language.] Fill thy mouth with blood! crow! crow! vomit blood. Stuff it! cram it! [the next words *pikku pikku, pili pili, &c.* are unintelligible] May his eyes turn in his head! May his bowels be twisted! may his heart shudder with horror! may his legs and joints totter! mangle him, break him like an unburnt potsherd,

(*a*) As to this mystic ejaculation see Böhtlingk and Roth's Sanskrit-Wörterbuch I. 1122. The current explanation—that it consists of three letters, *a*, *u*, *m*, combined and typifying the great divinities—appears to be erroneous.—*Ed.*

(*b*) The above lines and some others are so ignorantly written that the sense is a little obscure. *Devadatta*, the name now mentioned, is a fictitious name used in magic, like John Doe in law.

break him like paste of grain : in the fury of thy rage, with red eyes glare upon him! with thy red eyes destroy him utterly*(a)*! make him burst at the sight of thine eyeballs! Bhagavatí ! mighty Mother ! Kártta-vírya-jayí(*b*) !"

Let the above spell be reiterated a thousand times. The mode of using it will now be shewn.

Select a cemetery on the east of the village, and on a Sunday at night go and view it : walk seven times round the cemetery and stand at the north east of the ground : walk thence into the middle of the cemetery, turn to the west ; walk seven steps backwards and then strip naked : take sacred white earth (vibhúti) in your left hand, bind it in a knot in a yellow cloth, with frankincense; which must be in the same cloth : conceal it in cotton : do not put it in their houses but hide it in any temple erected to the evil goddesses (Çakti). When the due occasion comes, draw the (Çakti-circle) magic figure of the goddess : and put a gold coin in her mouth with a slip of the tuḷasí plant*(c)*. Recite the prayer twenty-seven times pouring water over it.

[The next word *anturiyam* has no meaning and seems to be an error for *avasaram* " at the proper time."]

At the proper time bring water from the well and mingle the sacred ashes therein and recite the spell 27 times*(d)*. Then drink that water. If you drink it all he will die instantly.

(a) Literally, 'do his business.'

(*b*) All these are epithets of Káli or her fellow demons. I here omit some words as they are unintelligible. Karaka vati leka ori orivi, Rudra, bhau, e, orili orili, tarila tarila, harili harili, je je je &c. po po &c. &c. yum yum &c. hrím hrím &c. These words are well-known syllables used in magic.

(c) " The *Ocymum sanctum,* or sacred basil, venerated by the Hindús as a type of Vishṇu...... ....it was used in the administration of oaths to Hindús, a few leaves with some holy water [tírtham] being held in the hollow of the hand of the deponent while the oath was repeated, and afterwards swallowed by him"—WILSON. The துளசி tuḷasí leaf is now always used in Madras in swearing both Vaishnavite and Çaivite witnesses.—*Ed.*

(*d*) This alludes to the number of constellations.

If you drink half and leave half, he will suffer dreadful pain. If you scatter the water he will remain unaffected.

The above is called the spell of Atakáru Durjana Káli. It is in the book called Saparam.

Take a bottle of toddy and a bottle of spirits with raw fish as a sacrifice. Then use this spell :

"Om námo Bhagavatí! Malayáḷa Goddess Mátanga [*i. e.* the Par'aiyan goddess] mighty in magic! who delightest in flesh and blood, who usest the rapid curse! let his five senses perish! O Power of Malayáḷa, smite him, smite him!" [here follow some unintelligible : magic monosyllables Om! Om! hrím hram &c.]

Go to a potter's kiln and a washerman's hearth, and collect the ashes from each; with ashes from a cemetery: spread all three on the ground, and erect a pentagon*(a)*, and set the image thereupon with red rice, a red fowl, and red sandal wood, and red grain and red flowers. Cut off the fowl's head and pour the blood into a cup, and dip two arrows therein. Then bless the arrows nine times, and with one of them pierce the neck of the image, and with the other pierce its eyes. Then bury it on the north side.

Use the following spell: "O'm, Hrím, Goddess, destroyer of the Universe, with the long tongue*(b)*, who ridest on the buffalo. Om! bhúm! O'm! phaṭ! Sváhá(*c*)!"

The above spell is to be used as follows: get a black goat's milk on a Sunday, and sprinkle it twenty-seven times behind his house, [here a few words are unintelligible,] and your enemy shall lose the use of his hands and feet, and be afflicted with burning fever.

"Om hrím grim trím! Thou who destroyest the senses of others. Blessed Káli, armed with the spear and drum, who

(*a*) The word *rati*, here inserted, seems to be an error.
(*b*) Káli is painted with a long tongue to lap up blood.
(*c*) The consort of Agni (ignis).—*Ed.*

delightest in red sandal, long-tongued, goddess of ghosts, and mighty in words! O devour, devour my foe!

Húm! phaṭ! Sváhá!"

When you use this spell collect some ashes, utter his name and sprinkle the ashes [some words unintelligible this shall cause his death.

"Salutation to Gaṇeça. I salute the great Bhagavatí, queen of magic. [Here the first paragraph is repeated.]

"I worship the Par'aiyan Goddess who delights in flesh and blood, the dreadful Káṭeri*(a)*. Eat! Eat! I hail the awful god Rudra*(b)*."

[Here some words are so ignorantly written that the sense cannot be made out.

Then follow the magic syllables as above.]

Mode of using the above charm. Take the grains called gram, pease, minumulu*(c)* &c. and mix them with rice, take a handful and make them into a paste with running water, and of this paste make an image. This you must place in

(*a*) 'A forest-goddess whose power lies in inflicting diarrhœa.' Brown's Telugu Dictionary.—*Ed.*

(*b*) One of the names for Çiva. [Rudra, with whose name Benfey (Griechisches Wurzellexicon II, 6) ingeniously connects λύρα for λυδρα=*rudrâ*, appears in the Vedas to be identical with Apollo. Both gods bear the bow. Rudra knows a thousand medicines, and is the best of leeches. Apollo is called ἀκέσιος, ἀκέστωρ etc., and is father of Asklépios. Rudra fares through storm and clouds, and has his hair therefore made up in a mighty knot, whence he is called *kapardin* in the Rig Veda, 1,114,1,5 'he who hath his hair wound into the form of a shell' (*kaparda* 'cypraea moneta') Böhtlingk-Roth, II, 62. So Homer Il. 20, 39 calls Apollo ἀκερσεκόμης, and artists represented him with long, strong hair bound behind into a knot. As Rudra is called *vanku*, 'tortuose incedens' as god of the eddying storm, so Apollo is λοξίας (from λοξός obliquus)—which has nothing to do with the ambiguity of his oracles. As Apollo had a sister Artemis, so Rudra had Ambikâ. Apollo was called Smintheus (Il. 1, 39) from σμίνθος 'mouse', and was represented by the sculptor Skopas with a mouse at his feet. The mouse (âkhu or mûsh, μῦς, mûshikâ) was sacred to Rudra. See Kuhn, Zeitschrift für vergleichende Sprachforschung, III, 335, Kuhn, Herabkunft des Feuers, 202. Pictet, Origines indoeuropéennes, II, 476.—*Ed.*]

(*c*) A kind of bean grown on dry lands (Phaseolus Mungo)—Wilson.

a pit on the north side of the town and spread a swallow-wort leaf under it. Adore it with lamps, frankincense and a wave-offering, and sacrifice a cock. Fold it up in a leaf and bury it. This will effect your object. The charm must be repeated twenty-four times.

[Here follows a spell written in Sanskrit, Telugu and Hindústáni mingled. It is incomplete as well as erroneous and is scarcely intelligible.]

"Vijaya Rám! Bismilla Rahiman keheki bandu, chelmen gaddu," take seven lákhs of land [sic in orig.], nine lákhs of land, ten lákhs of land. Ráma Sanyási is my Teacher!

"Salutation to Brahma and my teacher! son of Çiva, Rudra's vehicle, noble Hanuman, Sañjíva Ráya, O Mother Añjaná, [mother of the monkey Hanuman.] I implore thee by the feet of thy mother, O Hanuman, to aid me. Hari om, nijayar."

Second Document.

[This is principally written in ancient Sanskrit verse, being an extract from the Sabara Chintámaṇi, a copy of which in my possession (vol. 2 p. 222) has enabled me to decipher some passages otherwise unintelligible on account of the ignorance of the transcriber.]

Sabara Chintámaṇi or Code of Destructive Magic.

The art of logic is chiefly studied in the North, and the religious rites (karmam) in the South: but the art of Magic came from the east and conjuring from Malayáḷam.

"Aum! hrím! hróm, hail, O Goddess of Malayáḷa, who possessest us in a moment! come, come!" On a Sunday(a) let the conjurer obtain the corpse of a girl, and at night let him place it at the foot of a tree: let him place it on the altar. Then let him use the abovesaid spells, one hundred times

(a) It will be remembered that the body was found in the pagoda on a Sunday.

on a Sunday, and it shall be inspired by a devil, whom he must appease with flesh and wine to the full: offer him every thing he demands, and he will grant all you desire.

This spell is all powerful. It is called the virgin spell, and came from Malayāḷa.

I will now explain the mode used in the Karṇāṭaka country. This is taught in the Sabari, or code of necromancy.

In the midst of a temple sacred to Garuḍa (the hawk) *(a)* make white marks with earth, and erect a magic figure, and on a Sunday you must therein place an image, holding it in your left hand*(b)*.

"Therein sit with your face to the south and use the following spell—[which is omitted.]

But this spell must be delivered by the Teacher: unless delivered by him it is powerless and therefore I will not write it.

Another spell. "O Mighty queen of demons, who inhabitest the cemetery! come, approach! handmaid of Çiva, who devourest the buffalo." [Magic syllables, devoid of sense.]

Let the above spell be used for one day and night in a cemetery, and the awful goddess shall verily appear to thee in the shape of a buffalo.

This spell will give the power over ghosts. It is marvellous and most holy (loka-pāvanam*(c)*).

(*a*) The name of a mythical bird: he is the Prince of Birds, the Foe of snakes, Vishṇu's vehicle, and a son of Kaçypa by Vinatâ. Immediately after his birth he terrifies the gods with his clear-beaming light: they take him for Agni and pray the latter for protection. When they find he is Garuḍa, they praise him as the Highest Being and name him Fire and Sun. Aruṇa, the Sun's charioteer (the personified dawn) appears as the younger brother of Garuḍa. Böhtlingk and Roth, from whose Dictionary, II, 694, the foregoing has been translated, conclude by observing that some phenomenon caused by light (*lichterscheinung*) obviously lies at the basis of this mythe.—*Ed.*

(*b*) The sense here is so far imperfect that it cannot be determined.

(*c*) Literally 'world-purifying.—*Ed.*

Take the white consecrated earth, and one Sunday night go into a cemetery, and continue three nights in prayer. The third night the goddess Mainamma shall appear to thee, and demand what is prayed for. The worshipper must make her promise to come to him whenever he desires it. Then let him tie up the ashes in a shroud and come away. Then he must smear the ashes over the cloth and form it into a wick: with which he must light a lamp filling it with oil, and this shall give us power over any one we wish to summon; and you may then release him.

I will now declare the Andhra Mantram [spell written in the Telugu language], which is mysteriously concealed in the Codes of Rites (Ágamas.)

On a Sunday you must obtain the body of one who has been slain in battle, and at night bring it to a burying ground. Then fasten a cord twenty cubits long to a peg and let this be fastened to the corpse and to a tree. Then you must by the force of spells compel the ghost of the deceased to appear.

The following is the spell to be used.

"O Mighty Hero, full of might and valour, approach approach, accept accept the sacrifice, accomplish, accomplish the work! húm! phaṭ!"

This is the mighty spell, which shall cause the ghost to approach. You must offer him flesh, &c. as a sacrifice, and whatever else he desires. This shall make the hero subject to our power.

Then take the two sorts of ashes already mentioned, and make the lamp. Then recite the spell as before, sitting with your face to the south and in a moment he will obey your power. A most marvellous rite throughout!

Use this spell regarding a corpse slain in battle bound

with a cord (&c. see above), and use the said spell, which shall render the spirit subject to thee: then when you have occasion make the lamp as above directed, and the devil shall bestow all that is desired.

Spell. "Om! Om! hrím, Virgin goddess of black midnight, seize so and so! Húm! phaṭ!"

This spell is to be used repeatedly: and the goddess who rules the cemetery shall grant the prayer. She shall at thy pleasure bind him or draw him to thee. This is indubitable as the promise of Çiva.

End of the ninth chapter of the Magic Treatise named Sabari written by Nitya Nátha Siddha son of Párvati.

CHAPTER X.

I salute the awful man-lion who is marked with the spot of Vishṇu, lord of the world. I meditate on him in my heart and speak his name: and may it bear such fruit as it may.

Párvati speaks. Thou hast already declared the most awful spell that causes death.*(a)* Declare it to me O thou who art an ocean of goodness.

Çiva replied. In the Gauli*(b)* country is the fatal spell used; the mortal spell is the easiest of all.*(c)*

On a dark night, O goddess, let the Gaula spell be used by remembering which you shall cause in a moment the death of your enemy. If devoid of this spell you contemplate such a deed, it will be fruitless as showers of seasand.

(*a*) This passage exemplifies the incorrectness of the copy now examined: instead of *dáraṇa* 'horrible' is written *dháranam*, 'a mystical verse or a charm,' from *dhar* tenere.

(*b*) Query Gauḍa, the ancient name of Central Bengal:—*Ed.*

(*c*) In this passage the original is unintelligible, and I have resorted to my own manuscript.

Spell :—" Om ! I salute Bhagavatí, goddess of midnight, who delightest in human flesh and blood : who bearest the form of darkness, seize on so and so as thy victim. Drink his blood, eat eat his flesh, then let him die. Húm, Phaṭ Sváhá."

Let this spell be used in a cemetery and on that night the goddess Káli shall visibly appear to thee. Then satiate her with sacrifices of flesh as far as lies in thy power in the place where the corpse was burnt and that night shall thy foe sink into hell.

This is the Káli spell: let it be used one hundred times, beginning from the 12th until the 14th day of the lunar fortnight, and Káli shall appear before thee. Then appease her with sacrifice, and she shall grant all thy prayer. Then you must require of her to appear whenever you desire her aid.

Let him then perform the rite with ashes and the lamp as already directed, and whenever he wishes it she shall appear to him and do all he wishes.

Otherwise : recite the spell inserting therein the name of thy foe.

Form a paste of human bones and recite over it one hundred times the proper spell ; then let this be sprinkled on what the foe eats or drinks and he shall die in a week.

Further : the Malayáḷa mantra(*a*) is as follows. It is most potent. It is as follows.

" Om ! hram hram, glaum glaum, Swinefaced goddess : seize on such an one, seize him, seize him as a victim ! drink, drink his blood, eat, eat his flesh. O image of imminent death, Bhagavatí of Malayáḷa, hum, glaum, phaṭ, Om !"

Use this spell a thousand times and it shall be effective. Then specify the name of your enemy, strip yourself naked

(*a*) *Mantra* here means a magical formula.

and recite the spell in the elder house*(a)*, and it shall cause his death within a fortnight.

Procure the bones of a par′aiyan and say the spell over them on a Wednesday, and bury them in the house of your foe: his entire house shall die and he himself shall be left alive.

Form an image with wax in the form of thine enemy: take it in your right hand at night and hold your chain of beads in your left hand. Then burn the image with due rites: and it shall slay your enemy in a fortnight, and he shall sink into hell.

Read over this spell in the presence of the Mothers (*i. e.*, goddesses,) and say I will come when the time approaches. Then when you require their aid recite this spell a thousand times, whereupon the goddess will appear and certainly will do as thou desirest.

Recite it a thousand times in a cemetery and your enemy will perish in a fortnight.

Take a bone from a buryial ground, and recite the spell a thousand times over it, and throw it into your enemy's house; and it shall cause his ruin.

Then form an image of wax*(b)*, touch it with your hand, recite the spell a thousand times, and burn it with mould procured from a funeral pile, and it shall cause the death of the enemy.

I will next explain the Karṇáṭaka process of causing death, invented by A′dinatha; which, O goddess*(c)*, is infallible if recited in a cemetery.

(*a*) Jyeshthágáré means 'in the elder house,' but perhaps is an error; both manuscripts here coincide.

(*b*) Though this is written in Sanskrit verse the Telugu word *mainam* for wax is inserted.

(*c*) Throughout this chapter, which is in verse, the words O goddess, &c. are inserted to make the metre complete, and are needless in a translation.

"Om húm glaum, Ghost! who delightest in human flesh and blood, and eatest the honeyed cake; destroyer of thousands! devourer of numberless living creatures, devour so and so; devour him, drink his blood! eat, eat his flesh! Ha! hau, húm, phaṭ."

This supreme spell is to be recited in a cemetery; the sacrificer must be naked; he must stand on a shroud, and facing the south. In the wane of the moon he must commence it, and continue through the fortnight, reciting the spell in the order called The Dark Path. Then shall the queen of demons obey his call and come surrounded by her ghosts. She will ask him what he requires, and he must say, The death of my foe. She will graciously reply that she will bring it about. She will immediately undertake it.

Then let the sorcerer frame the name of his enemy into a spell, and thus bring about his death by reciting it one hundred times. Of this there can be no doubt.

I will next describe the Andhra mantras [or, spells potent in the Telugu country] which were composed by A'dinatha.

Spell: "Om hrím glaum, Lady Bhairava*(a)*, who destroyest the times of destruction, who art adored by hosts of potent devils; who joyest in human flesh and blood, approach approach, come come to me, húm, phaṭ, Sváhá."

This spell is to be used commencing with the name of Bhairava, and shall gain all power over spells. Repeat the name of your enemy and recite the spell a thousand times. Be he rich as Kubera (god of wealth) he shall sink into poverty.

This spell beginning with the name of Bhairava is to be recited: and when the proper time is come recite it with the name of the enemy. This is to be recited 1,000 times and it shall cause his death in a fortnight.

(*a*) Lit. 'Formidable', a name for Durgá:—*Ed.*

I will now state the spell used in the country of Ghurjara (Guzerat) composed by A'dinatha. This is a spell most potent to cause death. Let it be kept most secret.

Spell. (Same as given above with a mere variation in words and order).

Rule (same as above.)

Then offer a fowl with wine, flesh, &c., in a cemetery.

End of Chapter Tenth.

Charms used for vanquishing an enemy. Om nomo, &c., as above.

Salutation to Káli............as above.

Eat my enemy's flesh, drink his blood. Húm phaṭ, &c.

(Thus far is in Sanskrit—then follows, in Telugu).

Let this spell be recited 128 times, and throw a stone from the top of the house : it shall cause the death of your enemy.

Another spell. "Logic is chiefly used in the north, &c. &c.," see page 2.

(The remainder of this book is merely a repetition of the first pages. First comes the Keraḷa (or Malayáḷa) spell. Then the same pages are again copied to the end of Chapter Tenth).

True translations as far as the original is intelligible.

C. P. BROWN.

Remarks on the Sanskrit Manuscripts in Madras by DR. GEORG BÜHLER, *Professor of Sanskrit in the Elphinstone College, Bombay.*(*a*)

THE Government of Madras has made praiseworthy efforts to bring under the notice of Orientalists and to facilitate the use of the splendid collections of Oriental MSS. in charge of the Board of Examiners. We now possess two volumes of a Catalogue Raisonné of these collections by the Rev. W. Taylor and the first part of an alphabetical catalogue by Kondasvámi Ayyar. The largest portion of these MSS. is in Sanskrit, and to that portion, as I cannot claim any knowledge of the Dravidian languages, I shall confine the following remarks.

The Madras library has the advantage of possessing a very large number of Sanskrit MSS. In fact there will be found few libraries either in Asia or in Europe which can rival it in this respect. But it is not only the number of granthas (1249) which entitles the library to rank amongst the first: the quality of the books is equally remarkable, and we find among them a very large number of hitherto unknown works and some which were thought to be lost. In Vedic and Vedantic literature there is a fine collection of Upanishads(*b*),—the largest known. It contains as many as one hundred and eight books designated by this name, most of which are accompanied by commentaries. It is true that only a small portion of these Upanishads can be regarded as part of the çruti, the ancient Veda-literature. Most of

(*a*) A Catalogue Raisonnée (*sic.*) of Oriental Manuscripts in the library of the (late) College, Fort Saint George, now in charge of the Board of Examiners. By the Rev. William Taylor, Madras, vol. I 1857, vol. II, 1860. An Alphabetical Catalogue in the Vernacular and English characters of the Oriental Manuscripts in the library of the Board of Examiners, prepared by order of Government by T. S. Condaswami Ayyar, Librarian MSS. library, vol. I. Madras, 1861.

(*b*) A class of writings whose object is to discover the secret sense of the Veda.—*Ed.*

them are written in the interest of sects and are consequently of comparatively modern origin. But though this be the case, and though we already possess good editions and translations of the old Upanishads, the value of the Madras collection still remains very great. It will furnish materials for the further restitution of the texts and commentaries of the edited Upanishads and most important contributions to the history of the religious development of India.

Among the other works forming part of the Veda we meet with the two unknown names of Bráhmanas, Ashta and Chardi*(a)*. But we do not learn from the Catalogues to which Veda and çâkhâ they belong.

The number of books belonging to the Vedângas seems to be comparatively small. There are however some interesting works. The copy of a Yajurveda-prâtiçâkhya, whether it belong to the White or Black portion of this Veda, will be a welcome addition to the exceedingly scanty stock of compositions of this class. Two other books, the Çixâ-chandâmsi(?) and the Udochhadara(?) vyâkhyâna likewise seem to refer to Vedic grammar and may furnish new information on this difficult subject.

Amongst the Smârtasûtras, the Âpastambha-gṛihya and dharma deserve to be noticed, as MSS. of the former*(b)* have not been found elsewhere, and only very few copies of the latter are known.

In post-Vedic literature nearly all branches, with the exception of the Sâṅkhya and Yoga philosophy, are well represented. There are good collections of MSS. of the Epic poems, the Kâvyas, the Purâṇas, Dharmaçâstras, tales and fables, as well of the works on science and Mîmâṁsâ and Nyâya philosophy.

(*a*) Vol. I, p. 197, II, p. 312.

(*b*) Since I wrote this two copies of this work have been obtained in the Dekhan.

Some other classes of books deserve the particular attention of Oriental scholars, as they contain large and important additions to the hitherto known stock. Firstly, amongst the dramatic compositions we find no less than eighteen titles of new plays, most of which even were not known to exist. I here give these titles in alphabetical order and as spelt by Mr. Taylor :—

1. Ananga Brimhavidyavilásam (read Brahmavilâsa) Cat. R. vol. II, p. 363.

2. Ananta jîvanam by Atreya-Varata(?)-cavi I, 82.

3. Jagan móhana (fragment) II, 43.

4. Camalina Calahamsa II, 362.

5. Lacshmi-svayamvaram (read Laxmîsvayamvara) by Srînivása Cavi I, 81.

6. Misra bhánam (read Miçrabhâṇa ?) by Gunda Ráma, II, 363.

7. Mucundánanda bhánam (read Mukuṇḍânanda bhâṇa) by Mucundânanda II, 359 or according to II, 363, 368 by Cási pati (read Kâçîpati.)*

8. Naracâsura vyáyoga by Dherma cya vidhuvan(?) I, 12 or according to II, 42, 360 Dhermasuri(?)

9. Nágánanta (read Nâgânanda) by Srí-Harisha (Çrî-Harsha) I, p. 82.

10. Náráyani-vilása nátacam(?) I, 81.

11. Prahasnam (read Prahasanam) II, 360. The true title is probably left out, as Prahasana is the name of a class of dramatic compositions.

12. Prasanna Rághavam by Jaya déva, I, 82, II, 43, 359, 360, 401.

13. Ranga nát'ha prahasnam (read prahasanam) by Ranganát'ha, II, 368.

* A copy which lately came into my hands shows that it was composed by Kâçîpati.

14. Sankalpa sûryódayam (read sûryodaya) by Vedantácharya II, 359 and ṭîkâ I, 13, II, 361.

15. Sóma vallica yagánanta Prahasana-nátacam *(sic)* by Dindima Cavi I, p. 82, entitled also Sóma vali prahasyanam (read vallî prahasanam) by Dindima Cavi otherwise known as Arana giri nát'ha (?) I, 334.

16. Subhadra-dhananjaya nataca by Ráma cavî I, p. 81.

17. Vasanta tilakam bhána. By Varadáchárya I, 87, 223, 333, II, 363, 364.

18. Vencatésa prahasnam (leg. prahasanam) II, 363.

Copies of some of these plays are known to exist elsewhere. The Prasanna-râghava is found in the libraries of Oxford and Calcutta, as well as the Nâgananda and Samkalpa sûryadaya. This play, as well as the Narakâsura badha, the Vasantatilaka, Mukuṇḍânanda and Miçrabhâṇa, is known also in the Mahratta country and Gujerath. A particular interest is attached to the Laxmîsvayamvara, as we are told in the Vikramorvaçî and elsewhere, that the first Hindú drama composed by Bharata and acted in Indra's heaven bore this name. It would be interesting to learn if this Laxmî-svayamvara of Çrînivâsa has any claim to antiquity and *can* have given rise to this legend.

Not less interesting than the plays is the collection of grammatical works. Besides a good assortment of the more common books, it appears to contain one new work, or as it would seem, a number of fragments, of the grammar of Çâkaṭâyana. This grammarian is older than the other writers on grammatical subjects, whose works are known at present. He is quoted in the Prâtiçâkhyas, in Yâska's Nirukta and in Pâṇini's grammar. It is evident that the recovery of his writings would carry us at least one step further in the knowledge of the history of Indian grammar. It would give us

material assistance in tracing the development of this important branch of Hindú science. It could not fail to throw at the same time light on many difficult and highly interesting questions regarding general Sanskrit literature. I add a list of the MSS. of these works as given in the Catalogue Raisonné.

1. Zakátayana vyakaranam (Çâkaṭâyana-vyâkaraṇam) "It contains sutras, brief aphorisms with vrutta (read vṛitti) amplification (*sic*)." Cat. R. I, 348.

2. Zakatáyana do. I, 349.

3. Sácatáyana vyákyánam, a commentary on the sútras of Pánini (*sic*) by Sáctáyana (*sic*) I, 353. If the book is really composed by Çâkaṭâyana the description must be wrong.

4. Gana pattam, lexicon, by Sácattáyana (read Gaṇapâṭha mascul.) I, 399. The description of the work must be totally wrong, if the work is really a Gaṇapâṭha. For Gaṇa-

(*a*) Regarding Çákaṭáyana, the following extract from a letter, dated May 22nd 1863, from Professor Goldstücker to the Editor, will be perused with interest. "Before I chat with you on our and my doings in this part of the world, let me allude briefly to the immediate cause of this letter, I mean the great and mysterious Çákaṭáyana. That he is great, no believer in the eight books of Páṇini can doubt without tainting himself with heresy. For Páṇini mentions him, as his Patañjali says, *pújártham*, "to do him honour"—and Páṇini can do no honour to a little man. This mysteriousness, however, is another affair, which I will explain to you, in order to obtain light from you. Çákaṭáyana is a family name which may belong to more than one personage. One such grammarian is named by the author of the Gaṇaratnamahodadhi. I mentioned the fact, and the importance attached to Çákaṭáyana's name in my "Páṇini, &c." p. 177 ff., but on examining closely all the passages of that work, I arrived at the conclusion that this Çákaṭáyana very probably cannot have been the predecessor of Páṇini. A grammar of Çákaṭáyana in Sanskrit, but in the abominable Hala-Karṇáṭa-characters, is amongst the palm-leaf MSS. of the India Office. I have had a number of passages copied from it for me—and the result of my investigations is that this Çákaṭáyana too, is *not* the one mentioned by Páṇini. The last hope is therefore your Çákaṭáyana at Madras; but as the MS. of the India Office comes, I believe, likewise from Madras, I greatly apprehend that both may contain the same work."

pâṭha is the name for the lists of words comprehended under the several rules given in the grammar.

Besides these two classes of works, the books on the doctrine and history of the various Hindú sects cannot fail to excite the greatest interest. As many of these originated in the South of India, it is not surprising to learn that Madras is richer in the writings of Sectarians than any other library. We find there numerous works ascribed to Çankarâchârya, Râmânuja, Râmânanda, Madhvâchârya and other heads of sects, together with the commentaries of their disciples, as well as numerous tracts on the ritual and history of the sects in question. Many of these works are at present unique, and should the time come, as we trust it will, when the now neglected last stage of the religious development of India, shall again engage the attention of Oriental scholars, we shall have to look to the collections of Madras chiefly for further information on the history of the fall of Hindúism.

Finally the catalogues themselves call for some remarks. Regarding the Catalogue Raisonnée (*sic*) of the Rev. W. Taylor, little, unfortunately, can be said in its favour. No scholar can agree either with the general principles of the work or with its details. Each volume of this catalogue comprises a distinct collection, the first that of the East-India-House, the second that of the "Donative MSS." The MSS. of each collection are divided into families according to the materials on which they are written. Next, those of each family are sub-divided according to languages, and those containing works in the same language according to the characters in which they are written. Then only fallows the arrangement under general headings according to the subjects of the works in *alphabetical* order, and under each the MSS. are arranged according to their press-marks, separating those of the same book frequently by great distances. This scheme is certainly ingenious, but most un-

pleasant for those who have to use the catalogue, as it gives much trouble to find what one wants. The different copies of the same work instead of being arranged together are scattered in six, seven or more places. Thus in the first volume the MSS. of the Amarakosha are entered at pages 24, 109, 110, 111, 140, 243, 244, 245, 393-396, 598, 477. Unquestionably it would have been more rational and practical to have arranged the Sanskrit MSS.,—without taking into account the materials on which, or the characters in which they are written,—according to the branches of literature, to which they belong. In each class the works then ought to have been placed in chronological order, or in the positions assigned to them in the Hindú system of literature. Thus the first heading ought to have been "Vedic literature," subdivided in the following manner:—A. Ṛigveda, I, Mantrasaṁhitâ II, Brâhmaṇas, III, Âraṇyakas, IV, Upanishads, V, Çixâ and Prâtiçâkhya, VII, Chandas VIII, Kalpa, Çrauta Gṛihya and Dharmasûtras, IX, Jyotêsha, X. Anukramaṇîs and Pariçishṭas, B. Yajurveda, I, Taittirîya, II, Çukla, C. Sâmaveda, D. Atharvaveda. Each of the divisions B I, B II, C. and D must be sub-divided just like A, and after each work its commentaries and Paddhatis should be arranged.

But one would not quarrel with the reverend gentleman on account of the irrational arrangement of the MSS., if he had only chosen his "subject-matter" divisions properly, and consistently placed the same books in each. Unfortunately the confusion becomes perfectly bewildering through his total neglect of these two points. Firstly, we have a heading "Miscellaneous," under which a very large number of fragments and often entire books of the most different branches are jumbled together. This division occupies nearly one-seventh of the whole space allotted to the Sanskrit MSS. in the first volume and one-fourteenth in the second—in all 96 pages. Secondly, the same branch of literature is fre-

quently given under different headings. Thus Mr. Taylor sometimes comprises the law-books under "Dharmaçâstra," XI, p. 12, sometimes under "Law," XXI, 392 and sometimes under "Smṛiti," I, p. 184 Nay, he even gives the works on Rhetoric written in Grantha characters and belonging therefore to the same subdivision under two different headings—"Art of poetry" and "Rhetorical," I, pp. 72 and 165. Thirdly, several headings are so badly chosen, that it would have required greater care and attention than Mr. Taylor seems to be able to bestow on his work, to prevent confusion. Besides the heading "Vedantic" we find also "Advaita" and "Tatva Metaphysics," besides three general headings—Çaiva and Vaishṇava, and Çakti, we find Sectarial-Polemical. Now "Advaita" is one branch of Vedânta, and Tatva Metaphysics, a monster invented by the Rev. gentleman, and the Çaiva, Vaishṇava, Vîra-çaiva, and Çâkta systems are just as well "Sectarial," and nearly all their works are "Polemical." It was therefore wrong to make these divisions at all, and the result has been that works of the same class are scattered under three or four headings. In a similar manner Mr. Taylor gives frequently a heading "Romance Historical" and comprising the Kâvyas ; another "Tales," I, p. 195, II, 298, twice containing exactly the same description of works and several times the same books, which were before arranged under "Romance Historical."

Sometimes also Mr. Taylor contracts two or three headings under one. Thus we find "Veda, Vedânta and Upanishads" now under one heading, now separated : I, p. 66, Vedantic and p. 67 Vedas or Upanishadas*(sic)*; p. 196 Upanishadas, p. 198 Vedantic, p. 205 Vedas or comment on them : p. 306 Vedantic, p. 308 Vedas or Upanishadas : II, p. 311 Veda and Vedanta, p. 350, Vedas and Upanishadas.

Another frequent inaccuracy is that copies of the same work are entered under two different titles. For instance

we find the Védanta pari bhâshya (read pari bhâshâ) II, p. 12 under "Vedânta" and II, p. 20 under Advaita : the Vasantatilaka, I, pp. 87 and 223 under "Erotic," I, 133, II, 363, 364 under "Dramatic" : Chambu (leg. Champû)—râmâyaṇa I. 80 under "Dramatic" I, 175 under "Romance," the Itihásasamuchhaya, I, 83 under "Ethical:" I, 193, 302 under "Tales :" the Scánda upapuránam *(sic)* I, p. 291 under "Pauranical," I, p. 300 under "Saiva Sectarial" etc. Other books are arranged under wrong headings, e. g. I, p. 11, Srâddhavidhi by Aba-stambha-muni, (read Âpastamba) under Dharmaçâstra, whilst it belongs to "Ritual :" I, p. 3, Sancalpa Sûryodaya vyakyánam (read vyâkhyânam) under "Ethical' whilst it ought to stand under "Dramatic," I, 108 : Naityika mantra vyâkhyânam under "Incantations," whilst it belongs to "Ritual." I, 66 and 67, four copies of the Madhvávijaya under "Vedantic," which ought to stand under "Sectarial," as the work describes the life and opinions of Madhvâcharya, the head of the Brahmasampradâyîs. These few specimens will give the reader an idea of the chaotic confusion prevailing throughout the work.

But this is not all we have to say against Mr. Taylor's Catalogue. The introductions to the "generic" headings in the preface, the descriptions of the books are full of the grossest faults, inaccurate and unscholarly. What must we think of the Sanskritic attainments of the Rev. Mr. Taylor, when we see him translate (I, 196) the title of the well-known Brihadâraṇya or Brihadâraṇyaka by "*the spreading forest*," whilst it means the great âraṇyaka, *i. e.* the portion of the Veda to be recited in the woods ? or when he tells us about the same work I, p. 197 : "the writer is said to be Brihadâraṇya Rishi" ? In another notice of the book he correctly names Yâjñavâlkya as the supposed author. Further proofs for our assertions are found in the following instances.

Vol. I, 12, Vyayogacya nátacam (read Vyâyogâkhya nâṭakam) where the proper title Narakâsuravadha has been omitted. Vyâyoga is the generic name of a class of dramas.

Vol. I, 93 and 140 we read, "No. 1882 Siddhanta kâumudi vyákyánam, by Pràudha manoramâi" (read manoramâ). Here the title of this commentary on the Siddhântakaumuḍî, Prauḍhamanoramâ, has been mistaken for the author's name. The author is Bhaṭṭojîdîxita, who commented on his own work, the Siddhânta-kaumuḍi.

Vol. I, p. 67, Mr. Taylor makes the extraordinary statement, that the "Taittîrîya-samhitâ, relates to the Yajurvedam" (read veda, masc.) The fact is that the Taittirîya-saṁhitá is the first part of the Black Yajur-Veda.

In Vol. I, 114, No. 1893 and p. 118, No. 1898-1900, p. 116 No. 1828, the term Nyâya is constantly translated by "knowledge or wisdom," though it *never* has this meaning, and in these titles apparently signifies "Nyâya philosophy."

Vol. I, 199, l. 6 f. a., Viçishṭâdvaita is translated "almost advaita." It means the doctrine of unity (advaita) with attributes (viçishṭa).

Vol. I, 115, No. 1900 "Nyâyadîpaprabha (prabhâ), torch of knowledge (?) being a commentary on a work entitled Sashadhara, or the "hare-bearing moon—on logic." Here we have another quid pro quo. Sashadhara, or more correctly Çaçadhara, is the name of an *author*, who wrote a book entitled Nyâyadîpa or Nyâyaçâstradîpika. A commentary on this work is named Nyâyadîpaprabhâ, illustration of the Nyâyadîpa. This fault is so much less pardonable as Mr. Taylor himself states all this correctly on p. 111, No. 1901.

Before concluding this list of specimens Mr. Taylor's Sanskritic attainments, the reader's attention should be directed to a passage in the "Introduction" to the article Veda, where the Rev. gentleman gives some specimens of

the "Veda language" transcribed according to "the Jonesian orthography." He cites three passages of the Rigveda, one from each volume of Max Müller's edition. It will be enough to reproduce only one, the second, and Mr. Taylor's remarks, which apply to this in particular as well as to all three.

We read in volume II, page lxxxi:—

Tattrâisha sukre prat'hama
Yo jắta prat'hami sana khắndevò devan kratunà parya b'húshat—
Yasya sushma dodasi ab'hyasetàm nṛ̈mnasya maha sa janasa danda—
Yah játa ráva prat'hamah—manakhan—devah—devan—
Kratuna—pari—ab'hushat—
Yasya—sushmat—rodasi dati—ab'hyasetàm—nrinnasya—mahā—sah—janasha—danda.

Volume II, p. 469.

Then follows the passage from Max Müller's Rig Veda, v. III, p. 949, and Mr. Taylor goes on to say: "It will thus be seen that the composition is evidently designed for measured intonation by more than one person; and with recurring *alliteration* (as to *words* and letters) of a peculiar kind."

I can only gather two things from these quotations, firstly that Mr. Taylor cannot properly read the Devanâgarî characters, and secondly that he does not understand a single word of the passages which he quotes. In order to prove the first charge let us go over these lines, which, as they stand, are just as little Sanskrit as Tahitian. In the first line we have Tattrâisha for tatraishâ, sukre for sûkte, prathama for prathamâ; in the second, prathami for prathamo, sana khándevo for manasvân devo, devan for devân, parya bhúshat for paryabhûshat, and after jâta eva is left out: in the third line sushma dodasi for çushmâdrodasî,

nriṇnasya for nrimṇasya, maha for mahnâ, janasa for janâsa danda for indrah: in line 4 játa for jâtah, ráva for eva, manakhan for manasvân, devan for devân: in line 5 rodase dati for rodasî iti, nrinnasya for nṛimnasya, mahā for mahnâ, janasha for janâsah, danda for indrah. Now it is very curious that all those letters or groups of letters, which Mr. Taylor mistakes one for the other, kte and kre (क्ते and क्रे) ma and sa (म and स) sva and kha (स्व and ख) da and i (ड and इ) ra and e (रा and ए) mî and mo (मी and मो) bear in Devanâgarî some resemblances to each other. This fact, I think, strengthens our hypothesis regarding the origin of these little mistakes.

Now for the second charge, Mr. Taylor does not seem to be aware that the words "tatraishâ sûkte prathamâ" do not belong to the text of the Veda. They are the commentator Sayaṇa's and mean: "Here follows the first verse of the hymn."

Secondly, as Mr. Taylor speaks of "the alliteration (as to *words* and letters) of a peculiar kind," it appears that he was quite ignorant of the fact that in this, as well as the two other passages, he has copied the same verse TWICE OVER, first in the Samhitâpâṭha, where the words are connected, and next in the Padapâṭha, where the words are exhibited separately. Sapienti sat!

Another class of mistakes occurs in the spelling of the names and Sanskrit words. We find quite absurd and ungrammatical forms, like Brahmam for Brahma (base Brahman) karmam for karma (base karman), pátam (neuter) for pâda (masc.) vâtam (neuter) for vâda (masc.), Bhattoji dikshada for Bhaṭṭojîdîkshita, kuvalâiyánantam (neuter) for kuvalayânanda (masc.), Appâya dikshada for Apyaya dîkshita etc. On the first five pages of Vol. II, we counted

upwards of forty such blunders. Owing to this inaccuracy it sometimes becomes impossible to make out the correct form of the name. It would therefore seem that not all these mistakes are mis-prints "which can be readily corrected by an intelligent person with a pen" (Vol. II, page xciii). One must, however, admire the ingenuity and lofty moral tone of the excuse that follows: "A list of *errata*, besides being unsightly, has the disadvantage of implying that there are no other errors; which never can be safely asserted and should not be implied."

The description of the external appearance of the manuscripts is likewise inaccurate, so much so that it would be impossible to identify them. Frequently the number of leaves is not mentioned. We miss the notice of the dates when the manuscripts were copied, which is generally given by the copyist. The description of a book as "long and thin" or "medium length" etc. is useless. The correct plan, which has been followed about a dozen times, would have been to give always the exact measure by inches or by the numbers of lines and syllables. Besides this, the first and last line of each book and chapter ought to have been quoted in full, without which a manuscript cannot be properly identified.

In fine I can only regret that so much time and money should have been expended in order to produce so untrustworthy and unpractical a catalogue. In order to find out a single work it is often necessary to go over the whole catalogue, and when it is found one is frequently brought to doubt its identity. Under these circumstances I cannot but express the wish, in which every Orientalist will join, that the Madras Government may complete its generous work, and engage the services of some really sound Sanskrit scholar to prepare a catalogue which will satisfy the requirements of modern philology.

The alphabetical catalogue of Mr. T. S. Kondasvâmi Ayyar likewise calls for a few remarks. It has been made up apparently with the help of Mr. Taylor's catalogue and consequently shares a great many of its faults and deficiencies, such as wrong titles, double titles for the same work, ect. It is likewise not free from mis-spellings and ungrammatical forms, though on the whole it contracts favourably in this respect with Mr. Taylor's work. Its worst fault is, that it systematically departs from the principle of alphabetical arrangement, if one volume includes more than one work. We should advise Mr. Kondasvâmi Ayyar to alter this in the following volumes, otherwise his work will be of little value.

G. Bühler.

September 1863.

On the Madras Survey of the Southern Heavens, by N. R. Pogson, Esq., F. R. A. S., *Government Astronomer.*

A complete survey of the heavens, shewing in clear and well-arranged maps, every star visible at the date of their construction down to a faint order of brilliancy, has in all ages been an evident and pressing want, but one which, until within the last few years no astronomer ever attempted to supply. By some it may have been deemed a piece of drudgery unworthy of their higher capabilities, while others, less ambitious and therefore better fitted for so vast an undertaking have held back, probably overawed by the very extent of the task before them. Its importance cannot however be overrated, and its accomplishment will do more to facilitate the labours of future observers

than any other event recorded in the annals of the science. Numerous atlases and catalogues of stars have been made within the last half century, but until recently, none which could be regarded as faithful and indubitable representations of the heavens at the date of their construction. Celestial charts were formerly made by merely plotting down observed stars from known catalogues, without subsequent telescopic revision. As may be readily imagined, maps so formed abounded with omissions and errors; stars being frequently inserted of a fainter class than was intended for the limit of magnitude, while numerous brighter ones were left out altogether. The great catalogues, and most especially the zone observations made under the direction of the eminent astronomers Lalande, Bessel, and Argelander, comprising above one hundred thousand different stars, valuable and accurate as the two latter series especially are, give no definite idea of the stars actually visible with a telescope only two inches in aperture. A survey, worthy of being so called, must be so scrupulously revised, that no single star exceeding its stated limit in brilliancy shall be omitted; and the fact of an object not being inserted therein, must be proof of its inferiority to such photometric limit at the time the survey was made. Unless such accuracy can be ensured, the whole is comparatively of little worth; but with patience and perseverance the desired result, though confessedly very laborious, is nevertheless attainable.

Considerations of this nature induced the distinguished Director of the Royal Observatory at Bonn, to survey and map the entire northern hemisphere, including all stars down to the 9½ magnitude, and aided by his well-trained assistants, the enormous task was completed in less than eight years. Professor Argelander and his staff commenced operations in the spring of 1852 and concluded the requisite

observations in 1859, having entered down the positions of above three hundred thousand stars between the equator and the north pole. This crowning act of a career, the most energetic and brilliantly productive on record in the history of practical astronomy, was acknowledged by the Royal Astronomical Society of London, by the award of its gold medal, in February last.

In the year 1854, Mr. Carrington, then the possessor of a well-equipped private observatory at Redhill, commenced a survey of a more limited portion of the northern heavens; viz., that within nine degrees of the pole. His noble contribution to astronomical science comprised not merely the mapping of this most difficult portion of the hemisphere to a much fainter limit than in the general survey of Professor Argelander, but also the accurate meridian observations of 3,735 stars, none less than three times each star. Aided only by a single assistant, this labour was accomplished within the short space of three years. He too, in the year 1859, most deservedly gained a recognition of his valuable services by the R. A. S. similar to that since rendered to Professor Argelander.

Other portions of the heavens have been more or less accurately mapped by various observers, chief among whom, and indeed first in the field, stands our well known English astronomer J. R. Hind, whose comprehensive series of ecliptical charts has done so much towards the discovery of the minor planets and of new variable stars. It is to be hoped that the few remaining numbers of his series yet unpublished will be speedily forthcoming. These charts are confined to within three degrees north and south of the ecliptic, and contain stars down to the eleventh magnitude. Ecliptical charts have also been formed by Monsieur Chacornac, of Paris, formerly at Marseilles by Mr. Graham, at

Mr. Cooper's Observatory, Markree Castle, Sligo; and by the writer at the Radcliffe Observatory Oxford.

Thus, while the polar and zodiacal portions in particular, and the northern hemisphere in general, have been explored by Argelander and others, no steps had until lately been taken for similarly overhauling the southern hemisphere. That task, precisely similar in its nature and extent to Professor Argelander's in the north, I have formally undertaken at the Madras Observatory; and though from not being able to turn my undivided attention thereto until another work, an "*Atlas of Telescopic Variable Stars*" now in hand has been completed, and also from the climate of India being less suitable for bodily exertion than that of Europe, the Madras Southern Survey will probably be longer in hand than Professor Argelander's was, it was nevertheless commenced on January 1st 1863, and will I trust be completed by me, if blessed with life and health throughout the required number of years.

It has been suggested, that, since the polar portion of the southern heavens is not visible at Madras, the work should be divided between this and some southern observatories. but against this proposal I beg to enter my most earnest and decided protest! All members of the Indian Service must at some period or other of their term take leave of absence to visit a cooler climate, and when such change becomes requisite in my own case, I purpose to visit Australia or the Cape of Good Hope, and having all previous preparations duly made, there to complete the few southern maps not observable at Madras. While the southern nebulae, double stars, and the polar region offer ample choice of unappropriated pursuits, it would be a pity to see the same undertaken in unfriendly rivalry at different observatories; while being first in the field, I pledge myself never to

retire therefrom unless compelled to do so by failing health. Wherever else therefore a partial survey of the southern hemisphere may be attempted, it must be at once clearly understood that it is independent of the Madras Survey. Before leaving England, at the close of the year 1860, my intention of extending Professor Argelander's great work southward was well known to and warmly approved by Mr. Hind, Mr. Carrington, Admiral W. H. Smyth, the Revd. R. Main, and many other leading scientific friends, and my promise was given to the Government of India to begin the work with as little delay as possible. The dilapidated state of the observatory, the overwhelming arrears of meteorological and magnetical reductions, and the general inefficiency of the means at my disposal, all combined to render delay inevitable; but it is with much pleasure I am now able to state that, thanks to the lively interest taken by His Excellency Sir W. Denison in the promotion of science, thorough renovation of the buildings and revision of the staff of assistants have been sanctioned, and that such improvements have already been more or less completed as will prevent further loss of time and will tend greatly to increase the activity and efficiency of the observatory.

Lastly; it is with the warm approbation of Professor Argelander *himself* that I am now proceeding with the extension of his northern survey in the opposite hemisphere. I feel most deeply indebted to him for many valuable hints—the ripe fruits of his vast experience—with which he has favored me in prompt reply to my appeal for such assistance. Nothing could however be more contrary to Professor Argelander's own wishes and judgment, than that an observer in a totally different climate should be forbidden to exercise his own discretion and compelled to make the southern survey a mere copy or continuation of that executed at Bonn. Yet such has been laid down as a rule for the contem-

plated *opposition* portions elsewhere provisionally allotted. It is as well at once to disclaim any such intention on my own part. The scale of projection, and as a matter of course the magnitude of the stars in the Bonn charts, will be most strictly adhered to, but certain other points of departure appear to me desirable; and having had more than a dozen years' practice in every detail of celestial chart-work, (at first under Mr. Hind himself, the chief English authority in all such matters,) I feel perfectly justified in adopting my own methods and arrangements for the accomplishment of the heavy labour before me. While gratefully and eagerly profiting by the able counsel afforded me by Professor Argelander, Mr. Hind, and *others I may see fit to consult*, unsought recommendations from inexperienced hands will be utterly disregarded, and viewed only as intrusive and unwelcome, from whatever source they may emanate.

The following is a brief outline of the scheme of the Madras Southern Survey.

Number and Arrangement.—The charts will be seventy-nine in number; each only half the size of one of Argelander's. They will overlap one degree in declination at the southern limit, and the same quantity forward in right ascension, but not at the opposite edges. Dividing the whole hemisphere into five principal sections, the arrangement will be as follows:

Chart Number.	Limits of South Declination.	Width in R. A.
	° °	h. m.
1 to 24	0 to 21	1 4
25 to 48	20 to 41	1 4
49 to 66	30 to 61	1 24
67 to 78	60 to 81	2 4
79	One circumpolar chart of 10° radius.	

Preliminary Reductions.—The catalogues from which the chief mass of fundamental points will be derived are those of Lacaille, Taylor, Weisse's Bessel, and Oeltzen's Argelander. Every available star will however be reduced up to the adopted epoch, from every accessible known catalogue, and the whole will be collated, to form the separate lists of zero stars required for the zones of the respective charts. This is unquestionably the most tedious part of the whole undertaking, but far lighter for the southern hemisphere than that which Professor Argelander and his staff must have gone through for the northern portion. Apart from the necessity of such a reduction for the zero points of the survey zones, the complete revision thus afforded of all recorded positions of southern stars is in itself a work of much importance at the present time.

Instruments employed and mode of using them.—So long as it remains in my possession, the exquisite five foot Smythian telescope, the property of Dr. J. Lee, F. R. S. of Hartwell, originally made for Admiral W. H. Smyth, may be regarded as the standard instrument with which the survey is intended to be made. In case however of its being recalled, I have had the object glass of the old Madras Transit instrument, 3·94 inches in clear aperture, mounted upon one of Troughton and Simms's universal equatorial stands; and though inferior in quality to Dr. Lee's telescope, its somewhat larger aperture entitles it to rank as a secondary standard. Dr. Lee has most kindly lent me his instrument ever since the year 1857, and I doubt not that in consideration of the important service it will render if employed as proposed, he will, with his characteristic readiness to encourage every scientific undertaking which gains his approval, permit me to retain it on a much longer loan.

Although a five foot telescope is to be regarded as the standard size for the survey throughout, others will be freely employed; experience having long shown me the great advantage derivable from the use of different sized telescopes. For the broadest zones, and finest moonless nights, a $2\frac{3}{4}$ inch aperture, fitted on to the universal equatoreal stand before-named will be employed; while for moonlight nights, and zones at low altitudes, the Lerebours' equatoreal will be used. The eye will *always* be previously prepared by first turning to the nearest variable star map in my "ATLAS" at about the same altitude, and carefully remarking the appearance of the comparison stars of well known magnitude as given in such map. Zones may thus be taken within very few degrees of the horizon, with ease and tolerable certainty; and presuming that the observer has the magnitude scale of the five foot pretty well impressed upon his memory, the use of another telescope simply demands the allowance for difference of penetration due to the various apertures, computed by the formula: $M - m = 5$ (log. A—log. a)—in which M and m stand for the apparent relative magnitudes of the same star seen through the apertures A and a. Thus; a star of the 9·0 magnitude in the five foot, another of the 8·4 magnitude in the smaller telescope, and a third of 10·2 magnitude in the Lerebours equatoreal, appear all equally bright, under similar atmospheric conditions, and near the same altitude, when viewed with magnifying powers also proportional to the aperture of each object glass. The powers employed are from ten to twelve times the aperture of each telescope. The reticles are all of one form: a thick vertical bar, one edge of which bisects the field of view, leaving the preceding half clear, for the better estimation of magnitudes. Horizontal bars run across the following segment at intervals of five minutes of arc apart; the central and every other bar being exactly half, and the intermediate ones one

minute in thickness, so as always to be visible without illumination of the field. With this reticle right ascensions are noted to the nearest second of time, and differences of declination to the nearest half minute of arc. Greater accuracy is neither attempted nor desired for the object in view. The usual width of a zone is half a degree, though in certain parts of the heavens in which stars are less numerous than elsewhere, this may be increased to forty or even fifty minutes: while on the other hand, in more densely sprinkled parts, zones of twenty or even ten minutes width may be found most convenient.

Although the actual number of starlight nights throughout the year is decidedly less at Madras than in England, their equability and superiority in regard to clearness and steadiness of vision is incomparably in favor of the tropical skies. The fine weather comes altogether, from January to May, with a few breaks in the later months of the year; and it must be remembered that zoning near the horizon is safe and easy here, when in England it would be rarely possible at double the altitude.

Construction and Revision of Charts.—My own practice in this matter is, I am aware, quite at variance with the views of many who consider duplicate or triplicate zones requisite to guard against errors. I can only express my opinion founded upon long experience, that such reobservation of the same ground is mere waste of time, and no guarantee of the accuracy of the maps. My plan of proceeding is this. A zone of stars having been carefully observed, including all that time will possibly admit of being recorded as they pass through the field of view, and the reductions to epoch having been obtained from the preliminary catalogues, all stars, new and old alike, are inserted in the manuscript chart *in pencil*, the estimated magnitude being entered

against each star. Upon revision, by slowly sweeping with the telescope over the zone under examination, with the reticle in the field of view, each individual position and magnitude is verified, and the magnitude number crossed through horizontally, and no star is ever inked in until thus checked. Omitted stars are at the same time interpolated differentially, *never by estimation*, and these again await a similar revision on a subsequent night. Thus, and thus only can I conceive it to be possible to ensure the perfection of the work; but by strict adherence to this simple plan, the omission of a star, or an error of position recognizable on the scale of projection employed can only arise from gross negligence; and such I trust will never be found in any portion of the Madras Southern Survey.

Publication.—Lastly;—as regards the time and order of publication of the various charts:—partly owing to the yet unfinished state of the Observatory, the improvements and alterations in which are far from completed although considerably advanced—but chiefly from the priority due to the Variable Star Atlas, which it is now hoped speedily to have out of hand, I scarcely venture to expect that the first issue of a Survey Chart can be ready under two years from this time. The repairs and the atlas once completed, the maps will however make rapid progress, and they will be published as finished, regardless of numerical order. Nos. 3, 4, 15, 16, 19, 20, 62, 63 and 64 are now in hand, though but little has been done at any of them in the way of actual observation. A complete though necessarily very condensed star-catalogue will accompany each map. The final revision will in no case be entrusted to another, so long as I possess health and energy to accomplish it myself. Numbers 1 to 24 will probably be the *last* to appear, as they require by far the greatest amount of labour, both preliminary and throughout their construction; while their want is in a great measure already

supplied by the Berlin Academical Charts, the southern halves of which fall entirely within their limits.

N. R. Pogson.

Madras Observatory, *December* 1863.

On the discovery of Two new variable Stars, by N. R. Pogson, Esq., F. R. A. S., *Government Astronomer.*

THE search for new minor planets maintained during the past year with the Madras equatoreal, although not successful in its primary object, has nevertheless been the means of adding to the list of recognised variable stars, two interesting members hitherto unknown. Trusting that a brief account of these discoveries will not be out of place in the Madras Journal, the following particulars have been communicated.

The first, now known as U Scorpii, was detected on the 20th of May 1863, shining as a star of the ninth magnitude, in a spot in which no such object had been previously recorded, though most carefully watched in each successive May since 1854. Micrometrical measurements from an adjacent known star at once proved its fixity, and thereby suggested its probable variability. The following evening sufficed not only to confirm this impression, but also to show that the new variable was one of an extraordinary character, changing in brilliancy with a rapidity equalled only by one star of a similar nature, discovered by Mr. Hind, in the constellation Gemini, in December 1855. Eight days later, when last seen, U Scorpii had diminished to below the 12th magnitude, or less than one-seventeenth of its

brilliancy on the 20th. Full moonlight prevented any further records of the vanishing star, but taking advantage of a very fine interval during the totality of the lunar eclipse of June 1st, its invisibility was satisfactorily established; and though sought for on every suitable opportunity throughout the following five months, it has not since re-appeared.

The light comparisons actually made were as follows:

1863 May 20th	9·1	magnitude.
„ 21st	9·6	„
„ 22nd	10·1	„
„ 24th	10·5	„
„ 25th	11·0	„
„ 26th	11·4	„
„ 27th	11·9	„
„ 28th	12·2	„

Of the other new variable, situated in the constellation Sagittarius, little more can be said than that it was first seen on July 19th 1863, as a somewhat ruddy star of the $8\frac{1}{2}$ magnitude; and that from then until the present time it has slowly and steadily diminished to the 12th magnitude, or one twenty-fifth of its greatest recorded intensity of light. Dates of its actual invisibility in previous years cannot be furnished as in the case of U Scorpii, but if visible at all it was most certainly less than $11\frac{1}{2}$ magnitude on August 30th 1859; on July 22nd, and on August 7th 1860.

The approximate positions of the two new stars, reduced to 1860, are:

	Light Range.	Right Ascension.			South Declination		
		h.	m.	s.	°	′	″
U Scorpii...	9·5 to below 13·5 magnitude	16	14	25·5	17	33	21
T Sagittarii.	8·5 to 12·0 „	19	8	9·4	17	12	11

N. R. Pogson.

Madras Observatory,
December 1863.

On two Manuscripts of 'Omar Khayyám's Quatrains. *By* J. H. Arthur Branson, Esq., *Barrister-at-law.*

WE have much pleasure in calling the attention of those to whom the poetry of the Lucretian Khayyám may be a subject of interest to two manuscripts now in the possession of our Honorary Secretary. One of these is peculiarly well worthy the attention of Persian scholars, inasmuch as it contains two books of the Poems of Nazírí (نظیری) a poet whose works are rarely to be met with and of whom consequently very little is at present known*(a)*. Had the manuscripts come earlier to our possession we should have been glad to have thrown on this almost unknown poet and his works what new light we could have gathered from the perusal of the two books of his poems in Mr. Stokes's manuscript. We are anxious however to lose no time in bringing to the notice of those who may have greater capabilities and more leisure the MSS. now under consideration. Such remarks as a necessarily hasty inspection suggest to us, we here place before our readers.

In the first of these MSS. we find the two books of Nazírí which, as well as the quatrains of 'Omar Khayyám, are on paper and bound together in one volume measuring 5½ inches by 10 and containing 217 leaves.

On the flyleaf is a note in Persian to the effect that the volume was bought at the Nawáb's auction on 29th Rajib 1275 Hijra, and on the first page of the manuscript is the mohur of the unfortunate 'Alí Hussain Khán Thaj ul Umra, the son of Umdut ul Umra and grandson of Wallajah.

(*a*) Is this 'Nasser Khosrou' of whom D'Herbelot (ed. 1697) writes 'ancien Poëte Persien, dont les Vers spirituels and devots, sont souvent citez par les Contemplatifs. Il en a fait de trés beaux sur la Retraite and sur la solitude.'—*Ed.*

Of Nazírí's works there are here, as we have said, two books "The Kussaid" and "The Díwán." (قصايد و ديوان) The manuscript is in Shikasta and bears evident marks of not having been written by a Persian. If we may express an opinion without going further than the appearance of the writing, we should say that it was written somewhere about the middle of the last century in the North-West. Of the time at which Nazírí wrote it is hard without a thorough examination of his poems to speak with certainty. A glance at the headings of some of the Kussaid shews us first an ode in praise of God and the Prophet, next twelve odes to the twelve Imáms (Nazírí was a Shiya), and then follows an ode to Abd-ul Muzuffur Jalahl Udín Akbar Patshá, and this is followed by several odes to ʿAbd-ul Rahím Khán-i Khán (the Khán of Kháns *i. e.* prime minister) of Akbar. This would lead us to the conclusion that this writer lived about 300 years ago; but there is little doubt that a careful perusal of his writings will easily set this point at rest.

Of the quatrains of 'Omar Khayyám which are bound up with these two books of Nazírí's it is to be remarked that the manuscript is incomplete, breaking off at the catch word of the 802nd quatrain. This fact would lead us to join issue with the Calcutta Reviewer who says of 'Omar "every other poet of Persia has written too much, even her noblest sons of genius weary with their prolixity. The language has a fatal facility of rhyme, which makes it easier to write in verse than in prose, and every author heaps volumes on volumes until he buries himself and his reader beneath their weight. Our mathematician is the one solitary exception. He has left fewer lines than Gray." We are however unwilling to differ on so hasty an inspection of this manuscript from the careful reviewer whose opinion we have quoted. The inexcusable failing of oriental copyists,

which leads to constant repetition of a favourite quatrain may and probably will account for much of the great discrepancy which here appears. Concerning the other known MSS. of 'Omar Khayyám, the following will be found in pages VIII and IX of Major Evans Bell's reprint:

" 'Omar has never been popular in his own country, and therefore has been but charily transmitted abroad. The MSS. of his Poems, mutilated beyond the average casualties of oriental transcription, are so rare in the East as scarce to have reached Westward at all, in spite of all that arms and science have brought to us. There is none at the India House, none at the Bibliothéque Impériale of Paris. We know of but one in England, No. 140 of the Ouseley MSS. at the Bodleian, written at Shiraz, A. H. 866 (A. D. 1460). [Garcin de Tassy has a copy of this MS. at Paris.] This contains but 158 Rubâiyát. One in the Asiatic Society's Library of Calcutta, (of which we have a copy) contains (and yet incomplete) 516, though swelled to that by all kinds of repetition and corruption. So Von Hammer speaks of his copy as containing about 200, while Dr. Sprenger catalogues the Lucknow MS. at double that number. The scribes, too, of the Oxford and Calcutta MSS. seem to do their work under a sort of protest; each beginning with a Tetrastich (whether genuine or not) taken out of its alphabetic order; the Oxford with one of apology; the Calcutta with one of execration too stupid for 'Omar's, even had 'Omar been stupid enough to execrate himself." Then, in a note, is the following: " Since this paper was written we have met with a copy of a very rare edition, printed at Calcutta in 1836. This contains 438 Tetrastichs with an appendix containing 54 other not found in some MSS."

The quatrains are also in Shikasta, and, except to one well accustomed to this style of writing, there would be some difficulty in getting through a few of them.

We miss here the anonymous preface which heralds in the quatrains in the Calcutta MS. the following translation of which is given in the sixth and seventh pages of Major Bell's valuable reprint: already cited. "It is written in the chronicles of the ancients that this king of the wise, 'Omar Khayyám, died at Naishápúr in the year of the Hijra 517 (A.D. 1123), in science he was unrivalled, the very paragon of his age. Khwájah Nizámi of Samarcand, who was one of his pupils, relates the following story: "I often used to hold conversations with my teacher, 'Omar Khayyám, in a garden; and one day he said to me, 'my tomb shall be in a spot, where the north-wind may scatter roses over it.' I wondered at the words he spoke, but I knew that his were no idle words; years after, when I chanced to re-visit Naishápúr, I went to his final resting-place, and lo! it was just outside a garden, and trees laden with fruit stretched their boughs over the garden-wall, and dropped their flowers upon his tomb, so as the stone was hidden under them."

The Secretary has also shown us a second MS. on paper containing 122 pages, and written lately in Madras. Great credit is due to the scribe, Muḥammad Wazír, for the extreme care and clearness with which he has executed his task—a credit which he is unwilling to bestow on the copyist of the MS. which was his original, for at page 113, after the preface which we have just cited and which he, following the copy from which he has transscribed, places at the end of the quatrains, he has the following:

اما بقیاس ناقص ناقل این حرف وچنان می درآید
که اگرچه کاتب منقول عنه که اسم خودش محمد حنفي
الحسنی نوشته بقیاس خط مرد هندي نباشد وعرصهٔ
کتابش از سنه مذبور که سنه نقل حالست پیش از یکصد
وهشت سال مي نماید اکثر رباعیات صراحتًا پر غلط

علاوه بسیاری از رباعیات دیگران چنانچه افضل وغیره
که ذکر تخلص هم در بعضي موجود است واز وضع
متانت تلزیم حکیم بالکل بوي ندارد واکثر رباعیات
درج نموده است مگر چونکه ناملق انم را از رباعیات
بلاغت آیاتش شوقي پیش از پیش درسر میداد لهذا
نقلش معه خطبهٔ اخرش کانه نموده بررباعیاتیکه بالکل
یا به بعض تبدل موسوم دیگر شعرایند اسامي شعرایش
که از بعضي تذکرجات ملاحظه نموده بود برحاشیه اش
نگاشته وبعضي را که باوجود عدم اسلوبش با مغالطهٔ
تصحیف بقیاس نیامد معه رباعیات حکیم خالي گذاشت
وفي الحقیقته طبع فهم وسلیم که آشنائی از کلام حکیم داشته
باشد ببداهت مي تواند یافت

که این کلام فصاحت تلزیم حکیم است سوای این
بعضي رباعیات متفرقه موسوم اعلم العلام حکیم عمرخیام
که بنظر این عاصی خاطی در آمده بود نوشته مي شود

"But in my humble opinion the MS. from which I have copied this is by Muḥammad Hunafu-ul-Hussaini, who, by his mode of writing does not appear to be a native of India. This MS. appears to have been written 108 years after the above date [A. D. 1123]. The greater part of the quatrains abound in errors and beyond this many are the quatrains of others, as Ufzl &c., some of which contain even the titular names of the poets who wrote them, and in many the scent and flavour of the learned 'Omar are absent both from the language and the metre. But as I, the humble copyist, was highly desirous to collect his Honour's elegant quatrains, I have taken an exact copy of them as also of the account of his life that was written at the end of the same. With respect to such quatrains as seemed wholly or partly to be the productions of other poets, I have noted on the margin the names of the poets who appeared on reference to some biographical works to be the authors thereof.

As to the quatrains the authors of which I was from clerical or other errors unable to discover, I left them untouched among the poems of the honoured 'Omar, without any of my notes; but it is easy for an intelligent and candid man who has had an intimate acquaintance with the productions of his Honour to decide at once whether or not they are his admirable poems. The following are a few quatrains which appear to me to bear the impress of the mint of 'Omar."

Of this as of the other MSS. we cannot at present give any thing like a particular account. It contains 563 quatrains before we come to the anecdote and comment which we have copied: following the above note are 31 further quatrains.

J. H. Arthur Branson.

February, 1864.

[Note by the Editor.] The private reprint by Major Bell mentioned by Mr. Branson consists of fifty copies and appeared at Madras towards the end of 1862. It contains, first, "Rubáiyát of 'Omar Khayyám, the astronomer-poet of Persia, translated into English verse" (London, Quaritch 1859). The translator, Mr. Edward Fitzgerald, already renowned for his version of six of Calderon's dramas(*a*), has here, we venture to say, for the first time produced an English metrical version of an Eastern poet worthy at the same time of the poet himself and of the literature to which that poet has been introduced. Here again we find the same purity and vigour of language which have been admiringly dwelt on by Archbishop Trench when dealing with Mr. Fitzgerald's *Calderon;* and the tiresome effect produced by the arrangement of the Persian original, in which the quatrains follow one another without regard to

(*a*) London 1853. See as to these Archbishop Trench in his *Life's a Dream, &c.* London 1856, pp. 120, 121.

sense, but merely according to alphabetic rhyme, is avoided by the device of stringing the selected verses into a kind of eclogue.

After Mr. Fitzgerald's poem the reprint contains the note by M. Garcin de Tassy 'sur les Rubâi'yát de 'Omar Khayyám,' Paris, Imprimerie Impériale. 1857. Then comes the article on 'Omar which appeared in the *Calcutta Review*, No. LIX, and is obviously by the same masterly hand as translated 'Omar's *Rubá'iyát.* And lastly we find 'some more of 'Omar's Quatrains,' few or none of which had been previously rendered into English metre. The versions of quatrains in question have at least the merit of literality.

I.

I dashed my clay-cup on the stone hard-by ;
The reckless frolic raised my heart on high :
  Then said the shards with momentary voice :—
" As *thou*, was *I* once—thou shalt be as I."

Annihilation makes me not to fear :
In truth it seems more sweet than lingering here :
  My life was sent me as a loan unsought :
When pay-day comes I'll pay without a tear.

Has God made profit from my coming ? Nay.
His glory gains not when I go away.
  Mine ear has never heard from mortal man
This coming and this going, why are they.

I'd not have come, had this been left to me :
Nor would I go, to go if I were free :
  Oh best of all, upon this lonely earth
Neither to come nor go—yea Not to Be !

I came not hither of my own design,
And I shall go some day—no choice of mine :
  My graceful maiden, gird thyself and serve ;
We must wash down this earthly care in wine.

Yon heaven for our ruin—yours and mine,—
Rolls on to wreck our being—yours and mine.
  Rest on the grass, dear Love—it won't be long
Till grass grows out of *our* dust—yours and mine.

Alas for me! the Book of Youth is read,
The fresh glad Spring is now December dead:
  That Bird of joy whose name was Youth is flown—
Ay me, I know not how he came or fled!(*a*)

II.

Thou art the Opener, open Thou the door:
Thou art the Teacher, teach my soul to soar:
  No human Masters hold me by the hand,
For they are mortal—Thou for evermore.

III.

In school and cloister, mosque and fane, one lies
Adread of Hell, one dreams of Paradise:
  But none that know the secrets of the Lord
Have sown their hearts with suchlike fantasies.

Ah strive amain no human heart to wring;
Let no one feel thine anger burn or sting:
  Wouldst thou be lapt in long-enduring joy,
Know how to suffer; cause no suffering.

IV.

This is the time for roses and repose
Beside the stream that by the meadow goes,
  A friend or two, a Lady like a rose,
With wine, and none to heed how Mullás prose.

Come bring that Ruby in yon crystal bowl,
That brother true of every open soul:
  Thou knowest overwell, this life of ours
Is wind that hurries by—O bring the bowl!

With loving lip to lip the bowl I drain
To learn how long my soul must here remain,
  And lip to lip it whispers, "while you live
Drink, for once gone you come not back again(*b*)."

(*a*) Cf. *πόθος δέ μοι ὡς ὄναρ ἔπτη.* Bion. ά.

(*b*) Cf. Olivier Basselin, *Vaux de Vire* XVII, 'Les morts ne boivent plus dedans la sepulture.'

Sweet airs are blowing on the rose of May ;
Sweet eyes are shining down the garden gay :
  Aught sweet of dead Yestreen you cannot say—
No more of it—so sweet is this To-day !

This flask was once a lover like to me,
Lost in delight of wooing One like thee ;
  And lo ! the handle here upon the neck,
Was once the arm that held her neck in fee.

Your love-nets hold my hair-forsaken head,
Therefore my lips in warming wine are red :
  Repentance born of Reason you have wrecked,
And Time has torn the robe that Patience made.

V.

Khayyám, who long the tents of Science wrought,
To Sorrow's furnace hath at last been brought :
  Fate's shears have cut the tentropes of his life :
Hope's auctioneer has knocked him down for nought.

Description of two Manuscripts in the Library of the Madras Literary Society.—By the EDITOR.

I.

No. 205 a small quarto, on paper, entitled " A Compend of Miscellaneous Laws of Siam" pp. XII and 147 containing ten lines to a page ; in Siamese with the exception of the Table of Contents, which is in English and as follows :—

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(*a*) From this expression we may perhaps conclude that the scribe, Mr. J. T. Jones, was an American.—*Ed*

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J. T. Jones.

December 9th, 1835

II.

Folio, on paper, entitled ' Dictionnaire Tamil, François Par Le R. P. Louis Notal De Bourzes, Missionnaire du Maduré,' pp. X and 770, 46 lines to a page : the preface, with all its faults of spelling, accentuation and punctuation, is as follows :—

Ce Dictionnaire contient en pr. lieu les termes qui se trouvent dans le Dictionnaire portugais-Tamul, à la reserve de quelques uns, que j'ai crû devoir rejetter comme fautifs, et de très bas usage, et de quelques autres qu'il est aisé de supplèer en le formant par les règles. il se pourra faire que j'en aurai mit encore quelques uns par mègarde. il sera aisé de les ajouter. en 2e. lieu, on trouve dans ce dictionnaire la pluspart des termes contenus dans les 5 dictionnaires du pais. Ces 5 dictionnaires sont le திவாகரம் [*Divágaram*] qui est le plus ancien de tous. 2e. le நிகண்டு [*Nigaṇḍu*] qui est le plus fameux, 3e. le உரிச்சொல் [*Uric'c'ol*] qui est le plus court. 4e. le பிங்கலம் [*Piṅgalam*] qui est le plus ètendu, 5e, அகராதி [*Agarádi*] qui est le moins exact.

De ces sources vient ce grand nombre de termes, dont ce dictionnaire est composé, nombre que parroit encore plus grand, qu'il n'est en èffe par les variations d'orthographe qui obligent souvent à placer un même terme en 3 et 4 endroits diffèrents. Cette multitude de mots ne doit pas plus nous èffrayer, que nous ne nous èffrayons du grand nombre des mots latins qui sont dans Calopin, on n'est pas obligé à les sçavoir tous, mais il est avantageux d'avoir un livre, où l'on puisse trouver la signification de ceux qu'on ne sçait pas encore ; quand on les trouve, soit dans le

discours, soit dans les livres; C'est pourquoi je suis persuadé qu'il aura plus à ajouter à ce dictionnaire, qu'à y rètrancher. Le R. P. Antoine de Provence, autour du dictionnaire Portugais-Tamul, a rejetté les termes poëtiques, par ce qu'ils sont de peu d'usage, il devoit donc, ce me semble, rejetter par la même raison, quantité des termes Samouscroutam [samskṛtam], ou Granthoniques qui sont aussi peu d'usage, que les poëtiques, ou s'il a retenu ceux cy, parce qu'ils sont necessaires pour entendre les ouvrages du R. P. Robert Nobilis, il semble qu'il devoit retenir les poëtiques qui ne sont pas moins nècessaires pour e[n]tendre les livres du pays qui prèsque tous sont en vers.

Au terme Tamul j'ai souvent ajouté la manière dont il s'ècrit en Samouscroutam. Ce qui m'a obligé à le faire est 1° parce que c'est toujours petite erudition de sçavoir, et qu'ils sont les mots Samouscroutams et comme ils s'ècrivent en cette langue. 2° parceque selon les lettres, dont un mot s'ècrit en Granthonique, la prononciation Tamule ne laisse pas de varier un peu, je dis un peu, car il ne faut pas croîre que les Tamuls gardent tout à fait la prononciation samouscroutam. pour cette raison le dictionnaire Tamule place la même lettre en plusieurs endroits differents par example, il rapportera la lettre ப au B et au P, la lettre த au D et au T, la lettre ச au C, à l'S &c. en quoi outre que l'auteur s'est trompé plus d'une fois, il a rendu son dictionnaire embarassé; et n'a obvié qu' à demi à l' inconvenient qu' il vouloit eviter. Car s'il est vrai que la lettre த vg. varie de prononciation au commencement du mot suivant la lettre Samouscroutam, il n'est pas moins vrai que la prononciation varie; lorsque cette même lettre se trouve au milieu du mot suivant la diversité des lettres Samouscroutames, aux quelles repond la ditte lettre த. La cause de tout cecy est, que la langue Samouscroutam a au moins 26 consonnes. La pluspart des langues des Indes, comme Telougou, le Canara, le chingala, ont rètenus ce même nombre de consonnes, et voyelles, d'où vient que le Granthon se peut fort bien ècrire en Badaga, en Cannara, en Chingala; au lieu que les Tamuls n'ont pris que 18 consonnes; et ainsi ne peuvent ècrire le Samouscroutam avec leurs caractères ordinaires sans une grande confusion. il y a cèpendant un Alphabet fort approchant du Tamul, dont on se sert au Maduré pour ècrire le Granthon, et c'est celui dont je me sers, on peut l' apprendre trés aisèment autant qu' il est nècessaire pour la fin, que nous prètendons, qui est de sçavoir le Tamul, et la cause pour quoi la même lettre varie tant de prononciation, soit au commencement' soit au milieu de la diction, et quelque fois même de signification. Pour l'ordre des lettres comme ceux qui font des dictionnaires Grecs suivant

l'ordre de l'alphabêt Grec; composant un dictionnaire Tamul, j'ai crû devoir suivre l'ordre de l'alphabêt Tamul. Prèsque tous conviennent aujourd'hui, que c'est le moins embarassant, et il ne coute pas beaucoup de s'y accutumer. J'ai mis à la fin comme étrangères les lettres Samouscroutams; celles seulement, qui sont presque gènèralement reçues dans le Tamul, leur donnent entre-elles le même ordre, qu'elles tiennent dans l'Alphabet Samouscroutam.

Comme l' எ, et l' ஒ soient breves, soient longues, s'ècrivent avec le même figure, il les a fallu placer sèparement En pr. lieu l' எ brèf, et en 2° lieu l' எ long, aussi que l'a fait l'auteur de l' அகராதி Tamul, quoique celà soit incommode, il l'est encore plus de n'avoir pas de marques pour connoître si l' எ ou l' ஒ sont brèves, on longues. Dans quelques dictionnaires manuscrits portugais on a marqué les brèves et les longues selon notre manière d' Europe. Mais les copistes s'y trompent aisèment. j'ai été cèpendant obligé d'user de cet artifice, lorsque l' எ, ou l' ஒ se trouvent au milieu de la dictionnaire.

Vous aurez dejà remarqué combien le manque de figure pour marquer la lettre அ. lorsqu'elle suit la consonne cause de confusion. j'ai taché d'y rèmedier en mettant un zèro sur la consonne, lorsqu'elle se doit lire sans அ. vg. பல் doit se lire Pal. et non pas *pala.* au contraire j'ai souvent mis un chèvron sur la consonne qui se doit lire avec A vg பல். doit se lire *pala.* La figure ா est encore plus equivoque, pour eviter en partie la confusion qu'elle cause j'ai souvent usé de la lettre ou figure Samouscroutam ர, lorsque c'est un R est marqué d'une petite ligne lorsqu'elle ne sert qu'à marquer l'A long.

Pour le sens que j'ai donné aux termes, j'ai suivi ordinairement le dictionnaire portugais quand je n'ai pas eu des raisons particulières pour m'en ècarter, et quant aux termes qui ne se trouvent pas dans les dictionnaires du pais je leur ai donné le sens que l'usage, et les gens du pais que j'ai consulté, m'ont enseignés. je me serai trompé sans doute plusieurs fois. ce sera à vous Mes R. R. P. P., et à vos successeurs à profiter du peu que vous trouverez de bon, et à corriger peu à peu ce que vous trouverez certainement etre défectueux. je dis le même par rapport aux califications que j'ai mis à certains termes. Vous entendrez assez que *us.* signifie *Usité*, *Rec*, ou *Erud.* d'usage parmi les sçavants seulement, que *ign.* ou *inc*, signifie que ce terme m'est inconu, et à ceux que j'ai consulté. *Mad.*, *Marr.*, *Trav.*, *Com.*, *Malab.*, marque que ces termes sont d'usage au Maduré, au Marrava, à Travancor, vers le cap Commorin, au Malabar. P,

Poët., que c'est un terme poëtique plus usité en poësie que dans la prose vulgaire, toutes cettes qualifications ne sont nullement des arrêts irrevocables, au contraire je conseille fort à nos R. R. P. P. de lire ce dictionnaire avec des personnes intelligentes, et de s'en tenir plutôt à ce qu'elles diront qu'â ce que j'ai marqué. Un terme est souvent connu, usité, de bon usage, honnête dans un pais, qui a 15 lieus de là sera inconnu, inusité, de bas usage, et malhonnête, autant qu'il m'a été possible je m'en suis tenu à l'usage du Maduré. Dans la Mission du Carnate, il y aura sans doute bien des termes particuliers qu'il faudra ajouter, et qualifier autrement.

Regardez donc cet ouvrage comme une ebouché, il y a beaucoup à rètoucher. dans le cours de ce dictionnaire vous trouverez quantité des fautes contre la langue françoise. Ceux qui sçauront qu'il y a plus de trente ans que je ne parle guère que Portugais, ou Tamul, me le pardonneront aisèment, Vous trouverez aussi quelques mots Latins; quelques uns me sont echappés par l'habitude où j'etois de composer de Tamul en latin. Je n'ai mis d'autres parce que le mot françois ne me venoit pas, d'autre par modestie pour ne pas user de certaines expressions françoises peu honnêtes, d'autres par ce quelles m'ont paru plus précises et plus courtes.

Je distingue comme trois dialectes dans cette langue. La pre. d'un Tamul Samouscroutam pour ainsi dire, tel que le parlent plusieurs Brahmes, et Ecrivains des Princes, qui mettent le plus qu'ils peuvent des termes Granthoniques. le R. P. Robert Nobili suit en partie cette dialecte; la 2e. de Tamul rigide, c'est à dire, de ceux qui n'usent jamais, ou prèsque jamais de lettres Granthoniques; qui diront plustôt மொக்கம் (mokkam) que மொக்ஷம் (moksham) இலக்குமி (ilakkumi) que லக்ஷிமி (lakshimi) etc. Ceux ci suivent exactement la Grammaire, et encore plus exactement l'orthographe Tamulique, et usent volontiers de termes tirés de Dictionnaires du païs, quoique d'ailleurs peu usités, c'est le செந்தமிழ், (sen-tami̱l) ou le Tamul sublime; la 3e. est la courante parmi ceux qui parlent bien, comme sont les Vellales qui ont etudié, et qui ont mérité le nom de வாற்றைதத்தொழிலொர் (várattaidoḻilor). Ceux ci employent sans cèrèmonie les termes les plus clairs, les plus usités des autres dialectes. ils reconnoissent l'usage pour le pr. Maître des langues, parlant pour être entendus ils proportionnent la maniére de s'exprimer â la portée de ceux, â qui ils parlent, ou pour qui ils composent evitant, cêpendant de se ser, vir de termes bas, et impropres.

Je crois qu'il est bon, et quelque fois nècessaire de sçavoir quelque chose des deux prèmiers dialectes, mais que dans nos discours, dans nos

exhortations, et dans les livres que nous composons, c'est uniquement à la 3e. que nous devons nous en tenir. Je ne sçais même si le contraire, n'est point un artifice du Dèmon pour empêcher que nos livres ne fassent du profit. Je dis cecy surtout à l'occasion d'un livre composé à Ceylam, dans le quel l'auteur semble avoir choisi exprès les termes les plus obscurs, les tirant tantôt du Samouscroutam, et tantôt du Tamul sublime-quoiqu' assez souvent il retombe dans le Tamul le plus rempant avec beaucoup d'impropriétés.

Je rapporte ordinairement les prèterits en தேன் (tén), et en த்தேன் (ttén), plutôt que les prèterits en சேன் (sén), et en ச்சேன் (ssén), non que je condamne ceux cy: mais parceque les pres. sont plus elèguants, et à peu près aussi claires. il n'en coute pas plus de s'acoutumer au plus éléguant. Je dis le même de quelques autres comme de பார்த்தேன், (parttén) வளர்ந்தேன், (valarndén), &c. &c.

Vous trouverez plusieurs வ marqués d'une croix, c'est une marque que ces வ sont inserés pour l'Euphonie seulement, selon les règles de l'orthographe sçavamment expliqués dans la Grammaire du R. P. Constance Joseph Beschi. Si vous trouvez une petite ligne entre deux mots Tamuls, c'est marque que pour ne pas faire d'embarras, je me suis dispensé de suivre l'horthograph rigoureuse, que très peu de gens observent; ou bien que ce sont deux mots différents. Si vous trouvez une apostrophe, c'est marque qu'il se fait là quelque Elision.

Quelque long que soit cet ouvrage, ce n'est cependant que l'abrégé d'un autre plus long; où je marquois les Synonimes, et certaines enumèrations qu' on trouve dans les Dictionnaires du Pais, comme le R. P. Beschi les rapporte dans son dictionnaire poëtique. Je renvoye souvent à ce dictionnaire et s'il arrive que ce que je rapporte, qu'on s'en tient plutôt à lui qu' à moi.

Voylà Mes R. R. P. P. de quoi j'ai crû devoir vous avertir au commencement de ce Dictionnaire; il ne me reste qu'à vous l'offrir, comme je le fais très humblement, vous priant de vouloir bien me donner un peu de part dans vos N. N. et dans vos travaux Apostoliques.

LOUIS NATAL DE BOURGES. T.

On the Origin of the Sanskrit Linguals. By Dr. George Bühler, *Professor of Sanskrit in the Elphinstone College, Bombay.*

It is a widely spread opinion amongst philologists that nearly all those Sanskrit letters, which are usually designated 'Cerebrals,' owe their origin to foreign influence. We sometimes find it simply stated, that the Sanskrit-speaking Aryans borrowed them from the languages of the aborigines of India. Other writers have better formulated this idea, and supposed that these letters found their way into Sanskrit out of one of the Dravidian languages. The latter opinion is also advocated by Dr. Caldwell in his admirable comparative grammar of the Dravidian languages, where we find a short and able summary of the arguments, which have been or can be brought forward for it. In order to prove this hypothesis and at the same time to disprove the possibility of the Dravidians having borrowed the cerebrals from Sanskrit, he adduces the following reasons.*

1. The cerebral consonants are essential component elements of a large number of Dravidian roots, whilst in Sanskrit they are mostly deduced from dentals by euphonic changes.

2. None of the cerebrals consonants have ever been discovered in any of the primitive languages which are related to the Sanskrit, viz., the classical languages, the Gothic, the Lithuanian, Sclavonian and Zend. But Sanskrit, which came into contact with the Dravidian and other Scythian languages, abounds with them.

3. Tamil softens harsh consonants, as sh, which are borrowed from Sanskrit. If therefore the cerebrals were bor-

* Comp. Gram., p. 111, ff.

rowed by the Dravidians from the Sanskrit, Tamil at least would have altered them.

4. Tamil, which of all Dravidian tongues came least into contact with Sanskrit, uses them most frequently—a circumstance incompatible with the supposition of the derivation of the cerebrals from Sanskrit.

Dr. Caldwell, I think, has proved two things beyond all doubt; 1stly, that the so called cerebrals—or as we shall term them henceforth, *linguals*—of the Dravidian dialects are *not* derived from the Sanskrit; and 2ndly, that they did not belong to the original sounds of the primitive Indo-European tongue.

But I cannot allow, that he has established sufficiently his own assertion, viz., that the Sanskrit linguals owe their origin to Dravidian and Scythian influence. For he has forgotten to prove, that sounds *can* be or *are* introduced from one language into another, and to show, how the migration of the linguals from Dravidian into Sanskrit was effected. As the case stands, a stickler for the purity of Sanskrit might start another hypothesis—that the Sanskrit might have developed independently the sounds in question just as the English has done with its palatals. Likewise a full discussion of the origin of the laws according to which the greater number of the Sanskrit linguals is produced from dentals, through the influence of a preceding r, ṛi, ṛî or sh, would have been highly desirable. Lastly, Dr. Caldwell's statements contain a little error in point of fact. He says "*none* of the cerebrals (linguals) have ever been discovered in *any* of the primitive languages which are related to Sanskrit (Indo-European)." This is perfectly true in regard to ṭ, ṭh, ḍh, ṇ *(b.)* But the Sanskrit r, ṛi, ṛî and sh are according to the testimony of the grammarians and of the pronunciation of the modern Paṇḍits, likewise lingual;

the second and fourth of these sounds are found in Zend exactly in the same words and forms as in Sanskrit, and the first is common to all the Indo-European languages.

These objections require a fuller exposition. Regarding the first point, that the possibility of the borrowing of sounds by one language from another has not been proved, it would be unjust to throw the blame of so important an omission entirely on Dr. Caldwell. It is a common fault of comparative philologists that they admit loan-theories too easily, without examining the facts. Max Müller has combated, very justly, I think, the prevalent opinion, that grammatical laws can be or ever have been introduced from one language into another. Regarding the borrowing of sounds, it may suffice for the present to remark that it never has been shown to occur in the languages which were influenced by others in historical times, such as English, Spanish, and the other Romance languages, Persian, &c. Let us consider the case of the English. Though half of its words have been imported by the Norman race, though most of the old Saxon inflections have perished in the struggle between the languages of the conqueror and the conquered, though in some instances even Norman affixes have entered the organism of the original language, the quietism of the Saxon organs of speech has opposed a passive and successful resistance to the introduction of foreign sounds. The English has received neither the clear French 'a,' nor its 'u,' nor its peculiar nasals. On the contrary it has well preserved its broad, impure vowels and diphthongs, and it is now as difficult for the Englishman to pronounce the French 'a' or 'u,' as it was for his Saxon ancestors eight hundred years ago. But we find still stronger evidence against the loan-theory in the well-known fact, that nations which, like the Jews, the Parsees, the Slavonian tribes of Germany, the

Irish, etc., have lost their mother-tongues, are, as nations, unable to adopt with the words and grammatical laws, also the pronunciation of the foreign language. They adapt its sounds to their own phonetic system, and their peculiarities are recognisable even after the lapse of centuries.

As to the second point, it is certainly not sufficient simply to state, that the linguals were borrowed by the Aryans from the Dravidian tongues. It ought to have been proved that those conditions, under which alone the introduction of a foreign sound into a language is imaginable, really existed in Sanskrit. These conditions are, that a great number of foreign words containing the particular letter should first be borrowed, and that the sound should thus become perfectly familiar to the people. It ought therefore to have been proved that the Sanskrit already in the earliest times, possessed a large number of Dravidian loan-words containing linguals. But such an attempt has never been made, and it would, I fear, be quite fruitless. Dr. Caldwell enumerates in his list of Sanskrit words, which he supposes to have been borrowed from the Dravidians, only *sixteen nouns* which contain linguals, aṭavi, aṇi or âṇi, kaṭu and its derivative kaṭuka, kuṭi and its kindred kuṭira, kuṭera, kuṭumba, kuṇi or kûṇi, koṭa or koṭṭa, khaṭvâ and paṭṭa or paṭṭana.* *Two* of these only, âṇi and kaṭuka, are found in the Rigveda, which is generally acknowledged to be the most ancient literary production of the eastern Aryans, and the Dravidian origin even of these two is very doubtful. For âṇi, 'the pin of the axle of a cart', can according to the analogy of pâṇi 'hand'=parni from the root pṛi, and others,† be very well supposed to be derived from the root 'ar' which, as its causal arpayati and the cor-

* Comp. Gram. p. 439, ff.

† See below.

responding Greek verb ἀρ-αρ-ίσκω prove must have meant in the primitive Indo-European language 'to fit or to make to fit.' The etymological meaning of arṇi=âṇi would therefore be "a thing to be fitted (into some other thing.") (Compare also ara 'a spoke' which is derived from the same root). Kaṭu 'sharp' probably stands for kartu, like nâṭayati for nartayati, and seems to be derived from the root kṛit 'to cut.'

But even if Dr. Caldwell's opinion regarding the origin of all the sixteen words were correct, and even if they were found in the most ancient dialect of Sanskrit, is it likely that so small a number of words should have caused the production of thousands of Sanskrit linguals? I think there is a better way of solving our problem, and it is indicated by the third point which I brought forward against Dr. Caldwell's opinion. As the Bactro-Indian language contained at least three linguals, the consonantal and vocalised, 'r' and sh, and as it can be shown that by far the greater number of Sanskrit lingual mutes and nasals is produced either by the direct change of 'r,' 'sh' into linguals or by the change of dentals into the corresponding linguals through the influence of 'r,' 'ṛi' 'ṛî', sh, we are driven to conclude, that the latter letters originally caused the production of the lingual ṭ, ṭh, ḍ, ḍh, and consequently that lingualisation is entirely an Aryan proceeding rooted in the ancient phonetic system of the language. On further investigation it will however appear, that the letter 'h' and in rare cases also 'l' undergo similar changes as r and sh, and that in a very limited number of words linguals have been substituted for dentals without any apparent cause whatever.

I shall now turn to an examination of the facts in order to show that they fully bear out my assertions.

Regarding the relation of 'r' to the lingual mutes and nasal, firstly it is changed to ḍ, in anaḍvah, 'an ox.'* This word apparently is a compound formed by anas, 'a cart', and vah 'drawing' from the root, vah 'to carry' to draw a carriage. According to the phonetic laws of the classic Sanskrit, anas + vah ought to have become anovâh. In the Vedas however a final s—or, as the Hindú grammarians say, a visarga—preceded by 'a' and followed by a soft letter is frequently changed to 'r.'† Thus we find usharbudh, 'early awake' for ushobudh, vanargu 'a thief' for vanogu, literally 'going or prowling about in the wood.' Anas + vâh could therefore easily become anarvah and further be corrupted into anaḍvah, as 'r' is a lingual and being a soft letter corresponds to ḍ. The instance is, as far as I know, unique. Secondly, the consonantal 'r' as well as its two vocalised forms 'ṛi,' 'ṛî' regularly cause (by assimilation) the change of a following dental 'n' to lingual 'ṇ,' if they precede it either immediately or are separated from it by vowels, diphthongs, gutturals, labials, n, m, y, v, h. At the same time the 'n' must be followed either by vowels, dipthongs, or n, m, y, v. The numerous further modifications, which this rule undergoes, will be found in detail in Benfey's Vollstændige Sanskrit Grammatik, § 23, ff. It may be safely said, that seven-tenths of all the linguals thus owe their existence to the principle of assimilation.

But there are some cases in which, through further phonetic changes, it becomes very difficult to recognise that a lingual 'ṇ' has been produced through the operation of the above described rule. For according to another phonetic law, which seems to have taken effect only irregularly in Vedic and classical Sanskrit, but has later

* Compare also Rigvedaprâtiçâkhya I. 1, 30, ff. and Benfey's Vollstændige Skt. gram. s. 109, A. 2.

† This explanation of the word has already been given by the native grammarians, See V. S. Sanh. prât. III. 44.

become stringent in the Prakrit dialects, an 'r' immediately preceding an 'ṇ' must be assimilated to the latter. In the Prakrit dialects of the dramas an ṇṇ thus produced remains unchanged, e. g. kaṇṇo 'the ear' for karṇaḥ. In Sanskrit, however, as well as in some of the vernaculars, the first ṇ is dropped and a preceding short vowel may be lengthened. Thus we find in the Rigveda dûṇâça 'imperishable' for durṇâça, and dûṇaça, 'difficult to obtain' for durṇaça. In both these cases either form actually occurs. Âṇi 'the pin of the axle of the wheel,' which I believe to be derived from the gunated form of the root 'ṛi,' 'ar,' by the affix 'ni,' as well as pâṇi 'hand,' are other instances of this change, common to the Vedic and classic Sanskrit.* The latter word 'pâṇi' seems to stand for 'parṇi' and to be derived from the root 'pṛi,' 'to transact business, act' just as kara 'hand' from kṛi 'to do'. More frequently however the first ṇ of the group ṇṇ deduced from 'rṇ' is simply dropped, as in the roots ghuṇ, cuṇ, cûṇ, puṇ, pûṇ for ghûrṇ, cûrṇ and pûrṇ. The û of the roots pûrn etc. is originally short and is lengthened in consequence of a special rule in Sanskrit. This accounts for the double forms c'uṇ and ç'ûṇ. The ṇ of aṇi, a rarer form for âni, of aṇu 'small,' paṇ 'to buy and sell' seems to owe its origin to the same source.

Aṇu, I think, is derived from an Indo-European root, 'ar' 'to hurt,' 'to grind,' from which the Sanskrit îrma, arus 'wound' are derived and which in Greek is represented by 'al' in ἀλέω to grind, ἄλευρον 'flour.' The etymological meaning of aṇu (arṇu) would therefore be 'diminished by grinding,' (compare the Greek τερεν· from τείρω=Latin tero.) Regarding paṇ it seems to be derived from an Indo-European root par, which is preserved in the Sanskrit pṛi 'to transact business' and in the Greek

* Many of the following conjectures have already been brought forward by other philologists, especially by Benfey and Boethlingk and Roth. See Benfey's Vollst. Skt. gram. ss. 121, ff. B. & R's Skt. dictionary, s. v v.

περ-νημι "I sell." Its older form must have been parṇ. The noun baṇij or vaṇij 'a merchant' is without doubt a derivative from this root formed by the affix ij, like uçij etc. and its ṇ likewise has been produced by a lost 'r.' The change of the initial 'p' to 'b' or 'v' finds its analogies in the present of the root pâ, pibâmi or pivâmi for pipâmi and the causal of sphây, sphâvaya, sphâpaya.

But the lingualising influence of 'r' extends still further. It causes also the change of dental mute letters into linguals. This change most frequently takes place in the Prakrit dialects of the dramas, in Pâli, in the language of the Rock Inscriptions and in the modern vernaculars. The rules, by which it is regulated are :—

1.) Mute dentals are changed to the corresponding linguals after 'ṛi,' and ṛi itself becomes a, i, e, or u. Skt. krita = kaṭa or kiṭa, Skt. vṛiddha = vuḍha, tâlavrinta = talaveṇṭa.

2.) Mute dentals are changed to the corresponding linguals if preceded by r immediately. In this case the 'r' either may be assimilated to the following lingual, or it may be rejected, and in the latter case the preceding vowel may be lengthened. Skt. vartate = vaṭṭate, bhartâ = bhaṭṭâ, gardabhaḥ = gaḍḍaho, kartavya = kaṭavya, vardhaya = vâḍhaṇe, m vâdha-vuṃ.

It has been frequently asserted that these and similar changes are innovations introduced in the course of the development of the Indian languages and that they are unknown to the ancient mother-tongue. But in this, as in many similar cases, it will be found on closer investigation, that those laws which rule paramount in the secondary and tertiary Indian languages, began to show their influence already in the most ancient forms of East-Aryan speech. Firstly, the Vedic dialect contains a number of words, which

exhibit the phonetic changes just described. We find there kâṭa, for karta, dûḍabha for durdabha, dûḍâca for durdâça dûḍhî for durdhî and kuṭa for kṛita.

Secondly, the classical Sanskrit likewise possesses many forms, which have been affected by the Prakrit laws of change. But it is impossible to speak of them with the same confidence as to the Vedic words, since in most cases only one, the altered form, has remained in use, or the two forms differ in their meanings.

Thus nâṭayati, 'he dances, he acts,' stands for nartayati. Bhaṭa 'to support, to hire,' is apparently a denominative from the participle perfect of bhṛi, bhṛita 'supported, hired.' Kaṭu 'sharp,' probably stands for kartu (see above) and is derived from kṛit 'to cut.' From the same root, I think, kaṇṭa 'thorn' is derived, where the n of kṛit reappears as in kṛintana. Taṭa 'the bank of a river,' perhaps is derived from the root tṛî 'to cross over' and corrupted from tarta: compare pâra 'bank' from pârayati 'he crosses over.' Vâṭa 'garden,' 'plantation' from root vṛi 'to enclose,' standing for *varta*.

Further we find numerous offshoots of the root tṛid 'to strike, to destroy, to split,' in which the 'd' has been lingualised :—

1.) The two verbs taṇḍate and tâḍayati=(tardayati) 'he beats.' The 'ṇ' of taṇḍ is explained by the present form of tṛid, tṛiṇatti.'

2.) Taḍit 'lightning' (compare the German Schlag, Wetterschlag)

3.) Taṇḍula 'grain especially ricegrains, (compare Latin grânum = Gothic kaúrn, English corn, which apparently are derived from the root gar, Sanskrit jṛî, conteri.

Another instance of a d changed to ḍ through the influence of a preceding ṛi, r seems to be 'muṇḍ,' to shave, which, I think is a corruption of mṛid 'to rub.'

There are also examples of ḍh taking the place of dh e. g, in âḍhya, which apparently stands for ardhya and is derived from the root ṛidh 'to increase.'

But it seems that 'r' exercises its assimilating influence on following mute dentals, not only when it precedes them immediately, but also just as in the case of 'n,' when it is separated from them by a vowel. This I think, has been the case in puroḍâça 'a flour cake offered to the gods,' the latter part of which apparently contains a derivative from the root dâç, 'to offer.' Paṭh 'to recite' which by some scholars is considered a Prakritic corruption of prath 'to extend, to *praise*' may be quoted as another instance, (compare the Latin representative of this root 'pret' in 'interpretari."

Lastly we find a number of words in which a mute dental becomes lingual through the influence of an immediately following 'r.' Thus we find in the Veda vikindra and vikiriḍa—the 'r' regularly disappearing in the lingualised forms. In classical Sanskrit we have caṇḍa 'passionate, hot,' which doubtlessly stands for candra 'resplendent, glowing.' (Compare the metaphorical use of English 'glowing' German gluehend.) Another instance is meṭha 'elephant-driver' for mahâmâtra, (compare Prakrit mahâmettha.) To these, I think, belongs also daṇḍa, 'stick, punishment,' whose ḍ however seems to represent an original 'tr.' This word finds a convenient etymology, if we derive it from the root dam "to coerce, to tame" and the affix tra, which designates the instrument, and suppose it to stand for dantra "instrument of coercion." Regarding the change of 't' to ḍ compare the Prakrit gaḍḍo for garta.

We now come to 'sh (ष),' the fourth letter which helps to swell the numbers of the linguals. 'Sh,' firstly, whether radical or a substitute* for ch, ç, çc, x, or j, becomes ṭ, if it is the final of a word or if it immediately precedes the 's' of the termination of the locative plural or hard consonants except 't,' 'th' and s. Before soft consonants it is changed to ḍ, and if the following consonant is 'd,' or 'dh,' which are the initials of a grammatical termination, these letters likewise become lingual.

Ex. 1.) Dvish nom. sing. dviṭ, loc. plur. dviṭsu: upayaj l. plur. upayaṭsu °prâch l. plur. °prâṭsu.

2. prâch + vivâka = prâḍvivâka, dvish + dhi = dviḍḍhi 2. pers. sing. imp. Par. veviç + dhi = vevish + dhi = veviḍḍhi: pâprach + dhi = pâprash + dhi = pâpraḍḍhi: cax + dhvam = cash + dhvam = caḍḍhvam 2 pers. plur. imp. Ât.

Sometimes one of the two soft linguals produced according to the above rule is rejected and then a preceding 'a' becomes 'o,'† other vowels may be lengthened. Thus shash + daça makes shoḍaça instead of shaḍḍaça, shash + danta shoḍanta‡ instead of shaḍḍanta, and shash + dhâ either shaḍḍhâ or shoḍhâ. Similarly 'nîḍha,' as the corresponding Gothic 'nist' and English 'nest' prove, stands for nishḍa, niḍḍa. It is most probably derived from the root sad 'to sit' with prefix 'ni, 'down,' and the old nisada meant literally "a place for sitting down*(a)*." Also the root pîḍ 'to torment, to squeeze' seems to have undergone a similar change, as it appears to be contracted from pi + sad 'to sit upon.'§ The prefix 'pi' is the mutilated form api and

* It is commonly said, that "x, çc, ç, ch and j are treated as if they were sh." But in reality these letters were first changed to 'sh' and then to 'ṭ' and 'ḍ,' Pâṇini VIII, 2, 36 adopts also the latter view. For the full details on the subject see Benfey Vollst. Skt. Gr. § 66.

† Compare soḍhâ = sah + tâ and âshâḍha = âshah + ta.

‡ See Vâj. Sanh. prât. III, 46.

(*a*) But compare the Slav. gnêzdo, the first syllable of which the late Dr. Siegfried thought might be = γένος GANAS.—*Ed.*

§ Compare Greek πι-έζω = πι-έδ-γω.

occurs also in pi-dhâna, pi+dhâ, pi-shṭap. Instances of the simple loss of the first lingual occur in the second persons plural Âtmanèpada of the so called fourth and fifth Aorists and of the reduplicate perfect.

The termination of the second person plural Âtm. aorist is 'dhvam,' which, if attached to a verb ending in a diphthong or a vowel other than a, â, must become 'ḍhvam,' e. g. stu makes a-sto-ḍhvam, nî, a-ne-ḍhvam. The reason of this change is, that, as the fourth aorist is formed by combining the root with the unaugmented forms of the imperfect of the verb as, 'to be,' the termination dhvam stands for sdhvam. This form being preceded by i, î, u, û, ṛi, ṛî or a diphthong must be changed first to shḍhvam and next to ḍḍhvam according to the above rule. The latter form ḍḍhvam becomes ḍhvam by the rejection of the initial ḍ as in shoḍhâ. The rule regarding the change of 'dhvam,' dhve is less strict in the two other cases mentioned, but based on the same principles as in the fourth aorist. For the details compare Benfey Vollst. Skt. Gram. § 830, Bem. 2, § 847. Bem. 2, § 850, Bem. 2, where the explanation of these forms is also given. It ought to be observed that this change of 'sh' to 'ṭ' stands in strict analogy with that of 's' to 't' e. g. vas+syâmi makes vat-syâmi, avâs+sît, avât-sît, ukha+sras ukhasrat, parṇa+dhvas, parṇadhvat,* âs+dhvam, âddhvam. In either case the production of ṭ and t is caused by the disappearance of the sibilant element of the sh and s under peculiar conditions. The second mode in which 'sh' causes the production of linguals needs little comment. The rule is simply this, that 'n' preceded by 'sh' becomes ṇ under the same conditions as if preceded by r, ṛi or ṛî.

Thirdly, hard dentals preceded immediately by 'sh' whether radical or a substitute for ç, ch, x, çc, or j, are changed to the corresponding linguals.

* This word is mentioned by Çâkaṭâyana I, 2, 72.

Ex. tush + ta = tushṭa, upari + stha = uparishṭha, mârj + ti = mârsh + ti = mêrshṭi, acax + thâḥ = acash + thâḥ = açash-ṭhâḥ, viç + ta = vish + ta = vishṭa.

In Prakrit, Pâli and the Vernaculars shṭ, and shṭh, thus produced, become ṭṭh or ṭh : e. g. drishṭi makes diṭṭhê, nish-ṭhura ṇiṭṭhura, pṛishṭha, puṭṭha. In Sanskrit we find, as in the cases of rt, rṇ formerly mentioned, several instances of the working of this law. Thus jaṭhara, belly, stands as its Greek equivalent γαστήρ proves, for jash ṭara, originally for jastara. Regarding the change of 's' to 'sh' after 'a' compare â-shâdha from the root sah and avashṭambha for ava-stambha from the root stambh. In a similar manner many of the roots in 'ṭ' and 'ṭh,' which we find side by side with roots in ç or sh, seem to have originated by a 't' being added to the roots ç, sh,* and the final groups, shṭ, shṭh, undergoing the change referred to. Instances of this kind are ghaṭṭ 'to shake, to move,' which seems to be derived in the manner described from ghṛish 'to move, to rub,' ruṭ 'to be angry' = rush 'to be angry,' çuṭh 'to desiccate = çush 'to dry."

The fifth letter which may be turned into a lingual, and causes the change of dentals into linguals, is the letter 'h.' It becomes frequently ḍh, which if standing at the end of a word or followed by the 's' of the locative plural, is hardened to ṭ, e. g. mîḍhvân, 'giver of rain' seems to stand for mimih-vân part. perf. Par. of the root 'mih,' bhâravâh makes in the nom. sing. bhâravâṭ, madhulih in the loc. pl. madhuliṭsu.† The same change of 'h' to 'ḍh' is also frequently effected, if an affix beginning with t, th, d or dh is joined to a root ending in h. But then the ḍh together with following dental, which ought to become ḍḍh,‡ makes ḍh only.

* The addition of 't' to roots is frequent in Sanskrit e. g. in dyut = div + t, veshṭ = vesh + t, yat = yam + t, vat = van + t. In these cases both forms occur.

† Compare Benfey Vollst. Gram. § 66 I. 5.

‡ Compare the change of bh + t, th, d, or dh to bdha, etc.

Ex. leh + ti = leḍh + ti = leḍḍhi = leḍhi lih + thaḥ = liḍh + thaḥ = liḍḍhaḥ = lîḍhaḥ lih + dhvam = liḍh + dhvam = liḍḍhvam = lîḍhvam.

The omission of the ḍ, which is analogous to that observed in shoḍaça, shoḍhâ, shaḍanta, is, no doubt, owing to the aversion entertained by the Hindú against the immediate sequence of two lingual mutes.

The change of 'h' to 'ḍh' may at the first look appear surprising, as the former letter is a guttural.(*a*) Nevertheless, I think, it may be satisfactorily accounted for, if we assume that at the time when it first came into use, the Sanskrit already possessed linguals, that it belongs to a later period than the changes produced by r, ṛi, ṛî and sh. It is impossible to prove this assumption strictly; but there are circumstances which make it appear not altogether unlikely. Firstly 'h' is one of those letters, which have been developed in Sanskrit after its separation from the Indo-European sister-languages and even from Zend. It has been produced by a weakening of original 'gh' and in rare cases also of 'bh,' and 'dh.' Secondly, some roots whose h in the classical Sanskrit admits of lingualisation, show in the Vedas forms with gh only. Thus druh makes in classical Sanskrit in the part. perf. pass. drûḍha or drugdha, in the Veda drugdha only. If my premises be granted, the transformation of 'h' into 'ḍh' may be explained by the peculiarly changeable nature of the former sound. 'H' as well as its kindred, the aspirates, are the very Proteuses amongst letters. Sometimes the different branches of the Indo-European tongue exhibit all the three aspirates in one and the same word e.g. in Sanskrit gharma=Greek θερμό-ς=Latin formu-s. In Greek θ and φ are frequently exchanged, and the transition of th into f may be observed in several English dia-

(*a*) Some Sanskrit grammarians call 'h' urasya a "chest-sound." See Whitney's note to Ath. Veda Prât. I. 19.

lects(*a*). In Dutch and in the Saxon dialects of Northern Germany ch frequently replaces f, e. g. Dutch stichter=H. G. stifter, Low G. and Dutch achter=E. after, Low G. lucht=H. G. luft. In Latin an original dh is replaced by f, e. g. in for-es=θύρα Gothic daúr. In the same language and in Spanish h becomes f. Thus we have hœdus and fœdus, hostis and fostis, hordeum and fordeum, where the corresponding Teutonic words goat, geisz, gasts, guest, and gerste, show that the forms with h (for gh) are the more ancient. The same change of h to f occurs in the Vedic jarbhurâṇa for *jarhurâṇa, pres. part. Âtm. of the freq. of the root hṛi.'(*a*) In Sanskrit 'h' becomes also dh in the word anaḍvah 'an ox,' which makes in the loc. plur. anaḍutsu, in the instr. dual. anaḍudbhyâm, instr. pl. anaḍudbhiḥ, in the dat. abl. plur. anaḍudbhyaḥ. The latter part of the word anaḍvah, as before observed, is derived from the root vah 'to carry,' where 'h' stands for original gh. (Compare Greek Fόχος, Gothic vig). Taking then into account the general changeability of 'h' and the predilection of the Hindús for lingual sounds, as well as the peculiarly hollow pronunciation of 'h' in the modern vernaculars, which most probably prevailed also in ancient times, it is, I think, not astonishing to see this letter become 'ḍh.'

Besides the linguals which have originated in the different ways described, a small number are produced by assimilation of dentals to lingual mutes or nasals. Thus the root phan makes in the part. perf. pass. phâṇṭa instead of phâṇta, and tâṇḍâmarân stands for tân ḍâmarân, 'those Ḍâmaras (accus.) Finally there are a good many words in which dentals have been changed to nasals apparently without any

(*a*) E. g. fyrst for *thirst* Coleridge Gloss.2. *Afingred* 'a-hungered (Legend of S. Brandan p. 20 and *Piers Plouhman* ed. Wright p p. 133, 176, 283, 403) and *frefound* grey-hound, are examples of f for h—*Ed.*

* The reduplication jar, shows that the base is hṛi and not bhṛi, as sometimes has been supposed.

cause whatever. We find, for instance, darvâghâṭa, carvâghâṭa for — ghâta, the roots bhaṇ for bhan (comp. φων-έω), paṇ 'to praise' for pan, veṇ for ven. In these and numerous other words the form with the dental generally belongs to the Vedic language. The existence of the double forms, etymology and the results of comparative philology prove that the dental sounds are the more ancient, and also that no external cause produced their transformation. But we may safely conjecture that the gradually increasing predilection of the Hindús for lingual sounds is the true reason of these changes, since it is a fact, very frequently observable in the history of languages, that a phonetic innovation outgrows in course of time its original and legitimate limits. Thus in Prakrit every final m or n, which is not dropped, must be changed to anusvâra, whilst in Sanskrit this change takes place only if certain letters follow. Again in French an original 'c' followed by 'a' becomes a sibilant, sh, though the conditions, which caused the analogous transition of 'c' to ç, ch, before i and e, do not exist here. It is the general predilection of the Romance languages for palatals which produced this otherwise inexplicable phenomenon.

So much for the facts offered by the Sanskrit language in favour of my theory. We have seen that the ancient linguals 'r' and sh produced lingual mutes and nasals, either independently or assisted by the universal laws of assimilation, and that also ṛi and ṛî, the two lingual vowels, the former of which at least belongs to the Pre-sanskritic period, brought about the same result. Hence the Hindú contracted a liking for these sounds and changed not only 'h,' which on account of this changeable nature easily lent itself to this proceeding, to 'ḍh,' but also dentals to the corresponding linguals. Moreover I have pointed out repeatedly, how the predilection for linguals becomes stronger and stronger in course of time, how in the daugh-

ter-languages of Sanskrit and in their daughters laws which cause the production of linguals become more and more stringent.

One objection I must confess, may be made to my theory, namely, that I have not succeeded in accounting satisfactorily for *all* the Sanskrit linguals. But it was not my intention to examine all the Sanskrit words containing these sounds, but only to explain by far the larger number of vocables in which linguals occur, and especially the laws which in actual Sanskrit regulate their production. Moreover there can be no doubt that the want of historical documents, which could illustrate all the successive stages of the development of the language, will for ever prevent us from finding satisfactory etymologies for each of the words in question.

But as one of my principal objections against the loan-theory arose from its not being tested by the application to other cases, it would be unbecoming to conclude my paper without at least attempting this. Besides the probability of the theory advocated by me would be considerably enhanced, if it could be shown that languages other than the Sanskrit have independently developed sounds of the lingual class. I think that analogous cases can be adduced even from the limited range of Western Indo-European languages, with the pronunciation of whose sounds I am familiar.

In the ancient Indo-European tongues, spoken in the West, lingual nasals and mutes seem to have been unknown. At least we have no direct evidence to the contrary. But in modern times various Teutonic and Sclavonic dialects have developed a good many. Richer in linguals than all the other modern languages known to me, is the English, which at present has completely lost its unaspirated dentals. It is true, they still go in the grammars by this name, which they have long ceased to merit, and many Englishmen,

I fear, will strongly protest against the truth of my observation. But some English writers have recognised the existence of linguals in their own language. Thus Professor H. H. Wilson says in his Sanskrit grammar p. 3:

" The (Sanskrit) consonants are in general prononuced as in English, and we have, it may be suspected, several of the sounds for which the Sanskrit alphabet has provided distinct signs, but of which signs are wanting with us. This seems to be the case with the nasals and the *cerebrals.* We write but one ' n,' but we vary its articulation according, according to the consonants it precedes, as a guttural, palatal, cerebral, and dental, in such words as ' conquer,' ' singe,' ' none' and ' content.' So we write but one ' t' and one ' d,' but their sounds differ in such words as ' trumpet,' and ' tongue,' ' drain' and ' den :' in the *first* of which they are *cerebrals,* in the *second,* dentals."

I do not think that any man is a good judge to decide the question whether his pronunciation of the sounds of his native language agrees perfectly with the spelling. One constantly hears the most curious assertions on this subject. I have met well-educated people in Germany who firmly believed that they pronounced the impossible group 'dt,' e.g. in '*Stadt,*' and nobody but a phonetologist can be brought to understand that the High-German possesses two 'g,' one guttural and one palatal sounding like gy e. g. in 'gab,' and 'geben,' or that 'k' in German is slightly aspirated and pronounced nearly like 'kh.' Though it is therefore interesting to learn that Englishmen have observed the existence of linguals in their language, I cannot adopt their opinion so confidently as that of a foreigner whose mother-tongue has dentals as well as linguals distinctly marked. The proper persons then to decide the question are the natives of India. Now every Englishman who has learned either Mahrathi, Guzerathi, Hindí or Bengali from a native teacher

will have observed, that the Çâstrî or Munshî constantly corrects his pronunciation not of the *linguals* but of the *dentals,* and tells him that he (the pupil) always uses the former instead of the latter. The conclusion to be drawn from this fact is that the Englishman is familiar with the first class of sounds only. Besides, the natives of India in transliterating English words constantly use their linguals to express the English so-called dentals. They write for instance डीरेक्टर ḍîrektar instead of director, गवर्नमेंट gavarnmeṇṭ instead of government, etc. *(a).* There is, I think, no doubt, that no English 't' or 'd' is strictly dental, though as far as my perception goes, the English 't' and d' sound much more lingual if followed by 'r' than if they stand alone. The 'r' exercises therefore in English the same influence as in Sanskrit, (see above). But it is not the Eng-

(*a*) NOTE BY THE EDITOR.—Some time ago I made a similar remark as to the evidence afforded by transliteration of English words into Tamil. Thus 'Assistant Magistrate' is written அசிஸ்டாண்டு மாஜஸ்திரேட் asisṭáṇṭu májasṭiréṭ : 'Indorse' இண்டார்ஸ் inḍárs : 'endorsement' எண்டார்சுமெண்டு enḍársumenṭu : 'head' ஏட் eḍ : 'collector' கலெக்டர் 'kalekṭar' : 'certificate' சர்டிப்பைக்ட் sarṭippaikaṭ : 'court' கோர்ட்டு kórṭṭu : 'judge' ஜட்ஜ் jaḍj : 'judicial' ஜுடிசால் juḍisál : 'decree' டிக்கிரி ḍikkiri : 'deposition' டிபோசிஷன் ḍipósishan : 'district' டிஸ்டிரிக்ட்டு ḍisṭirikṭṭu : 'trustee' திரஷ்டி tirasṭi : 'notice, நோட்டிஸ் nóṭṭis : 'bond' பாண்டு báṇḍu : 'warrant' வாரண்டு váraṇṭu : 'Private Secretary' பிறைவேட் செக்ரிடேரி piraivéṭ sekriṭéri : 'Government' கவுறன்மெ ண்டு, Gavurnmenṭu. So in Telugu 'Magistrate' మేజస్ట్రేటు mêjastrêṭu : 'collector' కల్కటరు kalkaṭaru : 'doctor' డాక్టార్ ḍákṭár : 'acting' అక్టింగ్ ákṭing : 'August' ఆగస్టు ágashṭu : 'report' రిపోర్టు repórṭu : 'division' డివిజన్ ḍivíjan : 'October' అక్టోబరు Akṭóbaru : 'Assistant' అసిస్టాంటు asisṭánṭu : 'Head of police' హెడ్డాపోలీసు heḍḍápólísu : 'certificate' సరిటిఫికేటు sariṭiphiketu.

lish alone which has lost the true dentals : the same remark applies to many of the so-called Low-German, or more correctly Saxon, dialects of the north of Germany, its nearest relations. It might therefore be conjectured, that the change of the dentals had already begun before the Saxon emigration to England took place. However this may have been, it is certain that the English language at present possesses linguals, and has developed them either by itself or conjointly with its continental kindred.

The purely High-German dialect as spoken in the middle and south of Germany likewise possess a limited number of lingual sounds. These appear instead of the corresponding dentals after 'sch,' as in 'schtehen,' the true High-German form for the 'stehen' of the written language and the so-called classical pronunciation of the North. The sound of this 't' is however not quite so hollow as that of the Indian 'ṭ,' no doubt because the German 'sch' is not pronounced so far back in the mouth as the Indian lingual 'sh.' I should rather say that it stands in the middle between the two. I am little acquainted with the pronunciation of the other Teutonic dialects and therefore unable to say if they show signs of the same lingualising tendency. According to a statement of Mr. Norris, repeated by Dr. Caldwell in in his Comp. Grammar p. 113, the Icelanders possess a lingual 'd' in words as fullr, falla which are pronounced like 'fudlr' 'fadla.' Dr. Kuhn in the Zeitschrift für vergleichende sprachforschung, vol. XIII, p. 80 shows that these and similar words are pronounced in a like manner also in Norwegian dialects. But I am not sure whether the statement that this 'd' is lingual can be accepted without further investigation. Mr. Norris, if I understand his words rightly, thinks that the group 'dl,' must be lingual, which is not a priori *necessary*. If he be right, the fact should be explained not as he thinks, by the influence of the Lappish language, but be quoted as another instance of spontaneous development

of linguals. To prove the former assertion it would be necessary to show, that the ancient Scandinavian tongue has otherwise been influenced by the Lappish. The change of 'l' to 'd' finds its analogy in the modern Sardinian, where 'pellis' becomes pedde, pollex poddhige*(a).*

Besides the Teutonic languages the Sclavonic family possesses unmistakeable linguals. But here it is the 'l' which has undergone this change. The l in Russian and Lianian—these are the only Sclavonic dialects which I have heard spoken by and which I have learnt from natives—sounds very frequently just like the Marathi ḷ *(b),* and this latter sound is undoubtedly lingual. In Russian this lingual) 'l' has the effect of making an immediately preceding 'd' also lingual, e. g. in dlŭgu.

GEORG BÜHLER.

February 1864.

(a) So buddiri (bollire), casteddu (castello). The *dd* here sounds, according to Diez *(Gram. der Roman. Sprachen* i. 323), like English th. So in Sicilian cavaddu, addevu, beddu, griddu for cavallo, allievo, bello, grillo.—*Ed.*

(*b*) I have not adverted before to the existence of the Vedic ḷ simply because it is nothing but a substitute for ḍ, and ḷh for ḍh if these letters stand between two vowels. The Mahraṭhi ḷ seems not to owe its origin to the same laws.

MISCELLANEA.

I. *Six South-Indian Airs.*

THE Society is indebted to E. R. H., an accomplished lady, for five of the South-Indian airs now, it is believed, for the first time published. She took them down from the singing of her aya, a Tami<u>l</u> woman, named Annammá, and J. T. Mayne, Esq., Organist of St. George's Cathedral, has been good enough to arrange them so as to preserve their original simplicity. Of the nine airs collected by E. R. H. No. 1 is stated to be 'A hymn sung by the Muhamadans when Allah manifests himself to the people:' No. 2, 'An Indian song:' No. 3, 'A hymn in honour of Râma:' No. 4, 'A war cry of the Mahrattas when fighting against the English:' No. 5, 'Chingârâ Banglá, song composed in praise of Murugappa Mudaliyár's Bungalow:' No. 6, 'A mother's Lamentation on the death of her daughter:' No. 8, 'Dhobí's song:' No. 9, 'A lamentation supposed to be sung by a dove on her young being stolen from the nest.'

The cradle song No. 6, has already been printed with words by Monckton Milnes '(Lord Houghton)' entitled The Infant's Three Sabbaths, and an accompaniment by the Rev. J. Griffiths, M. A., which the Editor has taken the liberty to reprint here.

The Tami<u>l</u> words to this song, in the Tami<u>l</u> character, are as follows:—

சாஞ்ஜி பேபி, சாஞ்ஜி,
அன்னப்புராவே சாஞ்ஜி,
மாடப்புராவே, சாஞ்ஜி,
மயிலே, குயிலே, சாஞ்ஜி,
ஆவாரம் பூவே, சாஞ்ஜி,
குத்துவிளக்கே, சாஞ்ஜி,
கோவில்புராவே, சாஞ்ஜி,
அன்னக்கிளியே, சாஞ்ஜி,

Which is, being interpreted,

"Swing, Baby, swing!
Swan-dove, swing!
House-pigeon, swing!
Peacock, cuckoo, swing!
Cassia-flower, swing!
Standing-lamp, swing!
Temple-dove, swing!
Swan, parrot, swing!"

The accessible sources of knowledge of Indian music are still only two—Sir Wm. Jones' Essay *On the Musical Notes of the Hindús,* published in the third volume of the *Asiatic Researches,* p. 55, and J. D. Patterson, *On the Grâmal* or *musical scales of the Hindús,* Ibid. IX, 445. The following neat statement of the chief points established in these essays is translated from the fourth volume of Lassen's *Indische Alterthumskunde,* ss. 832, 833 : "The native musical literature is tolerably copious, and the Indians are acquainted with four systems, whose founders, as usual with them, are mythical personages. The first system is ascribed to Devarshi Nárada, who in the epic poetry appears as well-skilled in stories, and goes about between the Gods and men, to recite tales to them. From him I'çvara or Çiva received this system. The author of the second system is Bharata, the mythic inventor of the dramatic art: the author of the third, is the divine ape Hánumat, and that of the fourth, Kapila, the founder of the Sánkhya-philosophy. These assertions of course only mean that the Indians attached a high value to the practice of music; and this view is confirmed by the circumstance that in the epic mythology the Gandharvas appear as musicians in Indra's heaven. For the antiquity of song amongst the Indians, it is important to observe that the Udgátar i. e. the priest who sings the *sâman,* belongs to the Vedic period. As to later times we may refer to the fact that in the Mṛicchakaṭika Rebhila is praised as a renowned singer.

"The Indians are acquainted with our scale of seven tones, and denote them by letters [*sa, ri, ga, ma, pa, dha, ni*]. They admit, moreover, six rágas or modes, and the musical treatises contain minute directions as to the employment of them in the six seasons into which the year is divided. The Indians have also mythologised these ideas, and regard the six rágas as godlike beings, whose consorts are called Ráginîs and are eight in number. These couples produce forty-eight sons called *râgaputras,* by whom the various mixtures of the chief modes are denoted. This view furnishes a very striking example of the boundlessness of Indian imagination, as it is impossible really to distinguish so many modes from one another. In some MSS. are found portraits of these two and sixty male and female genii. A more accurate investigation of the musical writings of the Indians would be high-

ly desirable, as they throw much light on the representation of the dramas"*(a)*.

II.—*On the Early Marriages of the Hindús.*

At a monthly meeting of the Bombay Branch of the Royal Asiatic Society, held in its library rooms on Thursday the 9th June 1863, Dr. Bühler read a paper on the early marriages of the Hindûs, in which he attempted to prove that the laws enjoining the early marriages of girls are opposed to the practice of the Vedic age and therefore not binding, even for an orthodox Hindú. He first traced the gradual development of these laws in the Smṛitiçâstras. He pointed out that one class of these works to which the Sâmvarta, Âṅgirasa, Parâçara and other dharmaçâstras belong, limit the time for marriage much more, and are much severer in threatening punishments for offenders against their laws than Manu, Gautama and Baudhâyana. For whilst, according to the former, girls must be married before ten, or lose their caste, the latter authors, though they recommend early marriages, allow the father to keep his daughter at home up to the age of thirteen. After that time daughters are allowed to choose their husbands for themselves. The *a priori* supposition that these laxer rules are the more ancient, receives full confirmation from the Smârta, especially the Gṛihyasûtras from some of which it appears that marriages with women as well under as of more than full age were permitted by law.

But whilst the Smârta Çástras and Sûtras permit the contraction of marriages with females under age, the Ṛigveda seems to be opposed to this custom. Amongst the Ṛiks which are recited at the marriage-ceremony, there are some (R. V. X. 85, 38-41) which express the belief that the bride belongs to the three gods, Soma (the moon), Gandharva and Agni, before she passes into the possession of mortal

(*a*) The library of the Madras Board of Examiners contains seven copies of the *Bharataçástra*, a standard work on music, dancing and theatrical exhibitions. No. 2041, Taylor's Catalogue, I, 153), No. 1291 (Ibid. i, 291), No. 996 (Ibid. i, 433), No. 1587 (Ibid. i, 434), No. 757 (Ibid. ii, 211), No. 528 and 611 (Ibid. ii, 387), No. 284 (2) (Ibid. ii, 773). There is also a No. 1666 at vol. 1, p. 434 which is said to be " prefaced by matter on musical modes, and on the tunes adapted to times and occasions. A Telugu collection of tunes, called *Sangîta Ratnákaram*, was printed at Madras by Vénugo'pál Náyakkar in 1862. And the Editor possesses a similar MS. in Canarese entitled *Sangîta Ratnamála.—Ed.*

man. The bridegroom prays to Agni and Gandharva to cede the bride to him, and afterwards declares that Agni has given up his right of possession. These singular expressions are explained by Gobhilaputra, the author of the Grihya-saṃgraha, Samvarta, and Atri as allegorical. The girl is said to fall into the power of Soma when inguen pube contegitur, into the power of Gandharva when mammae ejus intumescunt, and into that of Agni when she has her καταμήνια τὸ πρῶτον.

This explanation, which is confirmed by modern researches on Vedic mythology, proves beyond doubt that, at least when these mantras were composed and introduced into the Bráhmaṇic liturgy, every bride must have attained puberty. Hence it is evident that in the Vedic age, and perhaps even later, the custom of early marriages was unknown(*a*). Dr. Bühler concluded his paper by pointing out that according to the best authorities on Smârta subjects, a law given by Smârta writers which is contrary to the words of the Veda Çruti, is not absolutely binding, and that either the Smṛti or Çruti rule may be followed.

III.—*The unprimitiveness of the Hindú veneration of Cows.*

WE take the following passages from the second volume M. Pictet's *Origines Indo-Européennes.* Paris 1863, pp. 45, 46, 62. In Sanskrit the guest is called *goghna* 'he who kills the ox or cow,' or according to Páṇini, 'he for whom they kill a cow *(yasmai gáṃ ghnanti,* Böhtlingk—Roth. II. 794) which answers to the biblical expression 'to kill the fatted calf.' It is doubtless to this usage that allusion is made in a passage of the Rigveda (I. 31. 15) Svâdukshadmâ yô vasatau syonakṛjjîvayâjram yajate sopamâ divaḥ, i.e., according to Rosen, Dulci cibo instructus, qui domi (hospitibus) oblectamenta parans, vivam hostiam mactat, is est similis coelo. It is evident that this custom could only have prevailed in India in the most remote periods, and that the cow

(*a*) This note (the greater part of which is taken from the *Bombay Saturday Review*) only shows that the marriage of *girls* before puberty has not the sanction of antiquity. As to the male sex consider the following passage from H. H. Wilson's *Essays* II, 58, 59. "The Vedas then did not sanction the marriage of children. In fact, it was impossible for a man to marry before maturity, as nine years are specified as the shortest term of his studentship, until the expiration of which he was not allowed to marry. He did not enter his studentship till he was seven or eight, and therefore at the earliest, he could not have been married before seventeen; an early age enough, in our estimation, but absolute manhood, as compared with the age of nine or ten, at which Hindú boys are, according to the present practice, husbands."—*Ed.*

was not then surrounded with an almost religious respect, as in the laws of Manu (xi, 59. 108) and the epics................ According to the tradition, the sacrifice of the cow *(go-medha* or *goyajna)* forbidden since the beginning of the Kaliyuga, the present era, had previously been in use.

IV.—*Bhútáḷa Páṇḍiya.*

Bhútáḷa Páṇḍyana, Aḷiya Santánada Kaṭṭukaṭṭale. Mangaḷúr German Mission Press 1859. Translated by M. O. Singala'cha'rya, Canarese Translator to the High Court of Madras, Appellate Side.

On Friday the third Mágha Çuddha in the first year of the era of Çáliváhana, corresponding to the cycle year I'çvara, at Siṃhalagnam, when the moon had arrived at her twenty-sixth mansion called Uttarabhádrapada, Bhútáḷa Páṇḍiya, nephew of Devapáṇḍya, having been seated on the throne given by Devendra to Vikramáditya was installed at Vizayanagar as follows. Devapáṇḍya, a merchant of the Páṇḍya country, having caused new ships to be built and filled them with cargo worth millions of pagodas, was about to launch them into the sea, when a Çivagaṇa (an attendant of Çiva) called Kuṇḍodara, seeing the ships to be new ones, demanded a human sacrifice. On this, Devapáṇḍya went to his house, and consulted his wife as to which of (his) seven sons should be given in sacrifice. In the meantime, his wife took the said seven sons along with her and repaired to her parents' village. Then the said merchant Devapáṇḍya laid himself down in his house under deep sorrow and abstained from food and drink. In the meantime, his younger sister Satyávatí hearing the news, came down and spoke to her elder brother, and being informed of the circumstances, pacified him by saying "you should not care for this trifling matter. Do you give the boy Jayapáṇḍya, a son of mine, as a human sacrifice; now get up and take your meals, etc." She then gave her son Jayapáṇḍya and went to her husband's house. The said Jayapáṇḍya was the son of Vírapáṇḍya, king of that dominion, who was defeated by Chandrángadaráya; consequently at the time of the offer of the sacrifice, the said Kuṇḍodara who was the king of the demons, perceiving him (the boy Vírapáṇḍya) to be a mahápurusha (an eminent or miraculous person) refused to accept the sacrifice on account of the ships of Devapáṇḍya and being graciously pleased with the boy Jayapáṇḍya exclaimed thus.

" By reason of my having been pleased with you, you should take my name and become master of the world, and be called by the name Bhútáḷa Páṇḍya: I have by the order of Çiva given you all the dominions that were ruled by Chandrángada who had defeated you." Instantly the said Bhútarája (king of demons) entered the town of Ujjayiní and having subdued the eight demigods such as Bhairava, &c. gave Bhútáḷa Páṇḍya a pratinidhi Siṃhásanam*(a)* throne which had been given there by Devendra to the said Vikramárka, and entered the town of Jayantika accompanied by Bhútáḷa Páṇḍyaráya.

While one Siddhavíraprasiddharáya was ruling there on a royal throne, the said Kuṇḍodara destroyed him by using various annoyance towards him. As this Siddhavíraprasiddharáya left no issue, the whole subjects of the state and retinues thereof met together; and a flower garland having been placed on the trunk of an elephant, a procession was carried on, when the said elephant put the flower-garland on the neck of the said boy Jayapáṇḍya; and, having made him sit on the throne given by Devendra, placed him with the throne amongst the assembly of the palace at the above mentioned Lagnam (propitious time) and prostrated himself. Then the whole subjects and retinues performed the paṭṭabhisheka ceremony for the prince and crowned him king. They also caused rewards in cloths and other gifts to be made and having caused complimentary presents to be made on account of the coronation returned to their respective houses.

Thereupon the said king reigned for six years, during the lapse of which the Makkaḷa Santána (rule of inheritance in the line of sons) was set aside, and that of Aḷiyasantána (inheritance in the line of nephews) was substituted for the following reasons. On the sixth year Chitrabhánu the ships of Devapáṇḍya sailed towards an island which was covered with snow and darkness, and there stuck to a miry bank. Then the provisions and water stored in those ships having been expended, Náráyaṇapáṇḍya, the Captain of the said ships belonging to Devapáṇḍya, as well as the other seamen, were grieving for the same, when the said Kuṇḍodara having become visible said, " O Náráyaṇa Páṇḍya, hear thou, do not thou fear; there is a mountain to the west of this where there are hasuruçilegalu

(*a*) Throne similar (to that of Devendra.)

(green stones) and siddharasam*(a)* (liquids made formerly by Siddhas.) Have the siddharasam poured into caldrons, &c., and also get the hasuruçilegalu (green stones) laden and pray to me at the same time: then the said three ships will float themselves." The said Kuṇḍódara after having said this, disappeared. Then Bidudoni boats were let down ; and on the green stone and Siddharasam being caused to be laden therein, prayers were offered to Kuṇḍódara, when, a heavy whirling gale having come on, the ships sailed away and rushing in the river-mouth of Hangarakatte harboured at Kallyanapur. Then the merchants of that place, having heard of and seen the Hasuruçiḷe and Siddharasam therein, gave notice of the same to Bhútaḷapáṇḍiya, who went thither and on an enquiry and inspection thereof a second time, found the said ships to be those of his maternal uncle Devapáṇḍya. Consequently he sent at that time to Páṇḍya country and having sent for his maternal uncle Devapáṇḍya said to him, "Do you take these goods laden on your ship." In the mean time, the said Kuṇḍódara said that he would not let the ships sail unless some one of his sons were given as a sacrifice. Whereupon he called his wife and children; and showing to her the goods aforesaid, took counsel as to giving any of those children as a sacrifice, when she declared in the presence of ten thousands of people of the great world that gathered there, that she did not want the goods, and so went down. Then, the said ten thousand people of the great world, the king, subjects, attendants, &c. learning the story of the said Bhútála Páṇḍyaráya from the origin, resolved that Bhútáḷa Páṇḍyaráya was entitled to the said Siddharasa liquid and Siddhasile stone.

Having himself had a title to the said Siddharasa and Siddhasile under the said resolution, he took them and, having made a well in front of the deity Someçvara, secured them therein. He then gave the said Someçvara the name Siddheçvara. Then, a building having been consecrated to the said Kuṇḍódara with such other things as are in honour to the same, an image was set up to represent him, to which the name Mahisháṣura, the protector of the world, was also given. Thereupon, a thousand paḍis of rice, and as many paḍis of flour made of fried paddy, and of

(*a*) These are supposed to effect the transmutation of gold.

Avalakki*(a)*, a thousand cocoanuts, tender cocoanuts, and plantains, as also a thousand paṭṭís*(b)* of betel leaves and a thousand fowls and sheep were given in sacrifice to the said Mahisháasura with consecration of incense on fire, and of light, &c. Then all the people and the attendants offered prayers to the said Mahisháasura giant, when, the said Kuṇḍodara, having inspired a person, assured (them) that uniformity of system and law should be followed by the rulers and the subjects; and on their declaring that they all would act up to the same unanimously, Bhútáḷa Páṇḍya caused fourteen Kattalekaṭṭu and sixteen Kaṭṭale rules to be written in the Madhya Maṇṭapa of Narasiṃhadevaru deity of the world, whereby the system of Aḷiya Santána or Nepotism has to prevail thenceforward among the ruling authorities and the subjects, and consecrated the same in the Madhya Maṇṭapa of Ananteçvara Devaru deity of the world. He also declared a curse that the family of such person as shall deviate from these rules, shall become extinct. He also pronounced that Balisávira Brahma and the said Mahisháasura are the Adhidevatás for the said Kaṭṭu rule, that the said Narasimha and Ananteçvara are Kuladevatas (family deities), and that Brahma, and Kshetrapála in the Pagoda of Ananteçvara, as also the goddess Rakteçvarí on the right side of the Narasiṃha Devaru deity of the world and Kuṇḍodara Mahisháasura, are Sthánadevatas (local deities) for the eighteen classes of people following the Aḷiyasantána system in each direction.

Thus Bhútáḷapáṇḍya reigned for twelve years. During the said interval, Bhútáḷapáṇḍya had for the performance of his marriage sent for twelve virgins through Kesavaṇṇa and Basavaṇṇa of the Jaina caste, whom he called from over the Gháṭs by sending message to that effect, and having married those virgins called the town Jayantika aforesaid by the name "Barakanyapur" (meaning city of twelve virgins) because twelve virgins were married in that town. On account of these twelve paṭṭáránís twelve Bastís (Jaina temples, *vasatí*), as many numbers of Çivalaya, Vishṇuvalaya, Durgalaya pagodas, as also places for twelve Gaṇapatis, Naga, Brahma, Kshetrapála, Rakteçvarí, and Mahishantáya, were built. Then four lakhs of houses *(guḍimane)* having also been erected, a Nagareçvara (deity

(*a*) Paddy soaked partly dried, roasted and pounded.

(*b*) A number of betel leaves folded up and having nuts wrapped up in one of them.

of the town) was also seated in the four corners obtained the following exclusive title:—

The king of kings, master of the throne of the king of kings, master over the masters of four countries called Tuḷu, Malayáḷa, Haiga and Karṇáṭaka, the first personage in the era of Çáliváhana ಚಾಷ ಷ್ಠಿಂ ಪ್ರಧಾನಯೋಗಯೋಗೇಶ್ವರ master of the sixty-four principal sciences (chatushshashṭi-pradhánayogayogeçvara), son of Vírapáṇḍya and child of Satyavatí, the true king of the people, sovran of the world, master of heroes, courageous and valiant, among heroes a spring-hero (shining like springtime) and king of Bárakanyápura (the great town of twelve virgins.)

Then he received the sixteen kinds of honours known in the world, and continued reverencing the Mahájanam (or people eminent for wisdom): he also remained pious towards the priests and gods; and having punished the wicked and protected the virtuous, allowed the customs of each caste to be observed. In the meantime he got an equal number of sons and daughters, by each of the said twelve royal wives. He divided his territory into portions on account of his twelve children; and the particulars of the princes to whom he made grants are as follows:—two Saṃstháṇams (states) called Chauṭa and Bangaru, two Arastanams (kingdoms) called Múlaru and Tuḷuvaru, two Dhoretanams (governments) called Ajalá and Śávantá, two Divâns called Bhairasa and Bhárasa, two vaḍḍús (seats or ranks of authority) called Kunda and Bunnáḷa, two cháváḍís called Neranki and Kadaríça. Of these twelve princes the Chauṭa and Bangaru are the principal ones. The said heads of the two parties of (Múlaru and) Tuḷuvaru have been called vice-lords, and these have (also) been pakshaprabhus (chiefs of the parties) for the thirty-two principalities which were formed by the said Kesavaṇṇa and Basavaṇṇa and for the seven tribes that followed the Makkaḷa Santána system, and also for the (newly established) eighteen castes that have to follow the Aḷiyasantána system. Bhúṭáḷapáṇḍya appointed the said chiefs, who are Tuḷuva kings, to regulate the observance of the caste of these Baḷḷáḷás.

Bhúṭáḷapáṇḍya thus ruled 75 years, and then appointed his nephew Vidyudyumnapáṇḍyaráya to rule over the country, which he did for eighty-one years. During the lapse of those years, he begot sons by twelve queens, and the particulars of these petty princes to whom he made grants are as follows. Two Aḍés, called Maradaḍe and Má-

rambade; Kaṭṭapádí and Kúlúr Dhoreballáḷás two; Padubidre and Iravattúr Kinnari Ballálás, two; Muduru, and Muddála Kinnari Arasus two; Yelanáḍu and Ainádu Heggaḍes two; Mudráḍi and Kántávara Kinnari Heggaḍes two. These are the twelve petty princes. The history of what happened on the sixth year of the coronation (of the said king) is as follows:—Kuṇḍódara (told) Vidyudyumnapáṇḍyaráya in an aerial voice that as the Kali (yug) approached, the green stone (emerald) and the treasure of precious stones should be buried under ground; that the well of Siddharasa should be shut up, and the image of Nága set up (thereon.) Having done this he received tributes from these Chauṭa and Banga and other kings and ruled for 81 years. After his death the following kings, who descended for seven generations from him, reigned respectively, viz., Bhúṭáḷapáṇḍyaráya for 75 years, Vidyudyumnapáṇḍyaráya for 81 years, Vírapáṇḍyaráya 32 years, Chitravíryapáṇḍyaráya 16 years, Devavírapáṇḍyaráya 9 years, Balavíryapáṇḍya 19 years, Jayavíryapáṇḍyaráya 27 years. These seven kings reigned in all 259 years.

Particulars of rules.

The fourteen rules enacted for three classes of people other than the Bráhmans are the following, viz:—

Játi, Níti, Mána, Maryáde, Huṭṭu, Kaṭṭu, Hinde, Munde, Hechchu, Kammi, Baḷi, Baṇṇa, Aḷi and *Uḷi*. The particulars of the above are thus:

Játi and *Níti* are the customs and manners observable by each caste. *Mána* and *Maryáde* are the marks of honour to be used by each (caste). *Huṭṭu* and *Kaṭṭu* are the abolition of the Makkalasantána system in all castes and the introduction in its stead of the system of Aliyasantána. *Hinde* and *Munde* (behind, before) are the different degrees of superiorities consisting in the Paṭṭa (fillet) and Paṭṭavali honours, held by four, eight and sixteen (houses respectively.) *Hechchu* and *Kammi*, 'superiority' and 'inferiority' are the distinction of respects which each caste deserves. *Baḷi* and *Baṇṇa* are such a class of people as have no seats and marks of honours. *Aḷi* and *Uḷi* are the death and succession by heir to the property.

Particulars of *Játi* and *Níti*. *Játi* or the classes of people are, Tuḷuvaru, Malavaru, Náyammáraru, Másádika, Jainaru, Hariçeṭṭi, Pariyaru, Kumbáraru (potters), Devaḍiga, Sáliya (weavers), Malekuḍiya, Pánchála, Kshauraka (barbers),

Agasa (washermen) Haḷepaika, Muṇḍáḷas, Kariññára, Holeya, Anḍékoraga, &c; and Nítí or rules enacted by Bhúṭáḷapáṇḍya for these classes, are that each of these should behave itself with such distinction as is to be observed in respect of its superiority or inferiority and also in such a manner as the manners and customs peculiar to each class may direct. The Mána Maryáde is as follows :—[Here occur eight lines unintelligible to me.—M. O. S.]

Huṭṭu Kaṭṭu is as follows :—

Bhúṭáḷapaṇḍya, having put a stop to the Makkaḷa Santána system, recorded rules in the Madhya Maṇṭapa of Ananteçvara deity of the world to the effect that the rules of Aḷiyasantána should be observed, and that whosoever shall deviate from the same, his family shall become issueless: thus the said Bhúṭáḷapáṇḍya repealed the Huṭṭu (succession in the male line), which was established before, and introduced the Aḷiyasantána system in its stead. Huṭṭu is this. Bhúṭáḷapáṇḍya promulgated the rules to the effect that only the wife and children should observe the imaginary pollution on the occasion of death, and share in the sin or virtue as also in the virtue accruing from gift and charity, and the fame or infamy (arising from any deeds), while the Santána (heir) is to observe the pollution only on the occasion of birth and not on that of death, and to succeed to the property.

Kaṭṭale is as follows :—

Bhúṭáḷapáṇḍya made it as a rule that no auspicious ceremony is to be celebrated through Brahmans, nor Mahályam (some inauspicious ceremony) to be performed for the deceased persons; nor the Panchagavyam is to be taken; nor the Puṇya Hóma ceremony attended with the use of Darbha (holy grass) on the occasion of birth and death to be performed; whereas on the occasion of death or birth only the Nirmálya (remains of the offerings) left in the pagoda (is to be taken) and in the name of those that brought forth children or died, the Púja as well as the Abhishekam ceremonies are to be performed for the deity besides the celebration of Çánti and Samarádhanam ones.

Hechchukaṭṭaḷe or customs and manners to be observed on a special occasion.

Bhúṭáḷapaṇḍya made a rule to the following effect :—

When a girl arrives at puberty, there should be the follow-

ing honours on such auspicious occasion; namely, a Nerrinamaṇṭapa (or a perpendicular wooden frame) with cloths covering the four pillars thereof and a canopy attached thereto; *Naḍemaḍi*, (cloths spread on the road for the procession to pass over); *Naḍechappara*, (canopy used in procession); *Naḍevádya* (musical instruments played in such procession) the dancing (of girls) and music, &c.: while on the occasion of death, *Nele Upparige* (a litter with upper story); music with *Pari*, as also the drums called *Bhéri* and *Dólu*, and the bell should be made use of and rice scattered about with the cry of *Muriyo, Muriyo.*

Baḷi (classes) are eighteen and *Baṇṇanirubaḷi* (or such classes as have the colour of a caste,) are four. The family of such person as has established Baḷisavira Brahma in the territories ruled by the king, who is competent for a Baḷi (class), is pure. Bhúṭáḷapáṇḍya declared that the Baḷi of such person as is not fit (for the same) or of such person as has no Brahma, or also of such an one as has no king for the country in which (he lives himself) is *Baṇṇa Kámmi* 'inferior'.

Sávu and Bálu are as follows. The eldest, either female or male, of the children of (one's) senior and junior maternal aunts, (*hirikiritáyi*) may stand (as a manager) on the death (of the former incumbent); but the children of (such) senior and junior branches would not be entitled to a partition. The (other) members of the family should live unitedly. If in so doing, discord arise between the elder and younger sisters, the eldest of these should give the younger a house as well as an allowance for the household expense, and should manage the affairs, having herself had a title to *Uriçiri* (good or bad?) Bhúṭáḷapáṇḍya made a rule that no niçuddhi (partition) should be made(*a*). Only the surviving heir will be entitled to the seats of the Paṭṭam, and Paṭṭi honours, and not the other members of the family, who would only be entitled thereto on the extinction of such heir.

Badukugalu are thus:—

Bhúṭáḷapáṇḍya recorded the rule that, excepting the wedding-gift given to a married girl, the property that may be given (to her) by the husband of his own accord, though it be only a *vísam* (a trifling portion, a sixteenth), may

(*a*) In S. A. No. 83 of 1862 the High Court of Madras held that division of family property could not be enforced by a member of a family governed by the law of aliyasantána, 1 Mad. H. C. Rep. 380; and this decision was followed in S. A. No. 323 of 1863.—*Ed.*

be taken away by the members of the family. He may assign to his children in gift, land, house, gold, silver, cow, calf, bullock, seeds &c., of his own acquisition, but not any ancestral property—the children would (thus) possess a right to the father's property.

Having made rules for each caste, he declared as follows. Should, on failure of heirs (in a family) a girl of the same Bali (class) be fostered, it will amount to an adoption of a girl, and there shall be no adoption of a male*(a)*, Moreover, on the plea that there is no heir in the family in which succession by heir has to prevail (as aforesaid,) no (rights) should be sold, nor should anything be conferred on the wife and children. If the line of the family is extinct without adoption, the (heads of the country) consisting of four, eight or sixteen persons shall cause a girl and boy of another family of the same Baḷi to stand as representatives of such extinct family, and these (representatives) alone will then succeed as heirs, but not the wife and children.

The merchants of the suburbs and town as well as every one, such as a servant, retainer &c., saying that they were the followers of (the rules of) Aḷiyasantána, and that there existed rules contrary to the Çástras observed by the Mahájana people of the said thirty-two villages, intended to usurp the *(Siddharasam)* liquid and the green precious stones which were received (formerly) in three ships. The course taken in order to prevent such usurpation was as follows. When Pújá was performed and offerings consecrated to the said Kúṇḍódara on account of the ships, the Brahmanámams (Bráhmaṇs) offered opposition. Then the chiefs of both the parties came together, and with a view to avoid disagreement among the Mahájana people, allotted the territories of Nandarája to Púrvapakshanátha (the chief of the eastern division) and the sovereignty of one Niḍamba to Paçchima Shóḍaçapakshanátha (the chief of the western division consisting of sixteen (villages); and having called the former Balagai (ಬಲಗೈ, right hand) Baḷḷáḷás and the latter Eḍagai (left hand, ಎಡಗೈ) crowned the chiefs of both the divisions with the title of Ubhayabaḷḷáḷás (two Baḷḷáḷás). Bhúṭálapáṇḍya ruled that these two Baḷḷáḷás were competent for the eighteen classes; that if the death of (any one of) them takes place, the rules of Aḷiyasantána alone should be observed (on that occasion), though

(*a*) So held by the High Court of Madras in S. A. No. 162 of 1863, Oct. 24, 1863, present Phillips and Frere JJ.—*Ed.*

their family may have been the followers of Makkalasantána system. He further observed that should any of the Ballálás of the above paṭṭam (seats of honour) die, a corpse should be made in his stead in *Baikuṇṭe* (straw) and the people of the eighteen classes joining together, should burn this corpse; that there must be a Púmáḍa Kaimáḍa Neleupparige (a litter with stories, adorned with flowers, &c.,) and *Chaturánga*, (four kinds of troops), *Tóraṇa* (string of leaves, flowers or sometimes cloths with ornamental needle-work hung across the highway), all sorts of musical instruments played upon, and drums beaten; and with all these they should scatter rice about—failing which they the eighteen classes of people will be in pollution, and that because it (the Baḷḷáḷá) is a spiritual preceptor and the people of the said classes are disciples (they) should observe the pollution as aforesaid.

Sixteen kaṭṭaḷes or rules.

1. It being asked that as there is only one girl (heir) in each family governed by the Aḷiyasantána rule, how would the line of the family continue for the future if the death of the husband of such girl should take place, Bhútá-ḷapáṇḍya declared that (in such case) the parents are not competent to give such girl to another person in marriage; but the maternal uncle and other members of the family may do so; that the parents are only to touch the Dháre Giṇḍi (a metal vessel with a tube on its side by pouring water from which a girl is given in marriage) while giving their daughter in marriage, and it should not be the custom with them to get (the girl married) by pouring water as aforesaid.

2. If in that (in the Aḷiyasantána family) a girl loses her husband, such girl is called a Buḍavaḷati. If the girl happens before she is wedded (a second time) to be pregnant by intercourse with another person of her own caste, Bhúṭá-ḷapáṇḍya declared that she may be given to such person in Buḍadháre marriage on receiving a fine from him. Bhúṭáḷa-páṇḍya added that if the person is of a higher caste than the girl, she may be allowed to be kept by him, or, on the contrary, if he be of an inferior caste, the Baḷḷáḷás may sell such girl on exacting a fine from him.

3. If a husband goes to another country leaving the married girl alone, Bhúṭáḷapáṇḍya declared that she may after the expiration of five years (from such absence) be joined and

wedded to another person. He also said that if she be found to be pregnant in the absence of her husband, she may be placed in the keeping of her paramour provided he be of superior caste, or wedded to him, provided he be of the same caste (with her), or if he is of an inferior caste, she may be abandoned, fined and joined to such caste.

4. If, after such girl have brought forth three or four children subsequently to her marriage, the husband goes to another country, she cannot be wedded to another person. If she had had connection with a person of equal caste and proved to be pregnant before the return of her husband, she cannot be wedded. If in such case, the person be of an inferior caste she should be abandoned (excommunicated.)

5. Bhúṭāḷapāṇḍya recorded a rule to the following effect. If a married girl find her husband to be an adulterer, and if the latter find the former to be an adulteress, and so if the husband take her and deliver her over to her parents' house, she may be wedded to another person. If the husband will not have her again and take care of her on receiving another woman into his keeping, the members of her family may send for her from her husband and wed her to another person. Moreover, if (the husband) tease the wife by striking and abusing her as he likes, a reconciliation may be effected between them three or four times; but should there be a recurrence of disagreement among them even afterwards, the members of her family may send for her from her husband and get her wedded to another person.

6. If a girl shall arrive at puberty before marriage and become pregnant before marriage, such girl, as well as the person that caused such pregnancy, should be fined, and the girl may be given into the keeping of that person if he be of superior caste, or married to him if he be of the same caste; or abandoned if he be of an inferior caste; as declared by Bhútāḷapāṇḍya.

7. If a girl who arrived at puberty as aforesaid takes any body before her marriage and elopes with him, she may be married to him if he be of the same caste with her, or abandoned if he be of an inferior caste, or be allowed to be kept by him if he be of superior caste; as ruled by Bhútá-ḷapāṇḍya.

8. If a married girl leaves her husband and takes another of the same caste with her and elopes with him; she may

be wedded to the latter. If the person so taken by her be of superior caste, she may be left in his keeping; or abandoned at once if he be of inferior class, as declared by Bhúṭáḷapáṇḍya.

9. In respect of the girls of Kshatriyas, the manners and customs of Kshatriyas should be observed. Between Kshatriyas and Bráhmans, marriage may be performed by Kaidháre (giving the girl in marriage attended with the pouring of water through the giver's hand in continued dropping). If the male is of the same or of inferior caste (with the girl) she shall be abandoned; as mentioned by Bhúṭáḷapáṇḍya.

10. As regards the Jaina caste. If (the male is) of the same caste she may be left in his keeping, and if she had joined a superior or inferior caste, she must be abandoned, as declared by Bhúṭáḷapáṇḍya.

11. If the girl is of Malavár caste (and the male is) of the same or superior caste, she may be allowed to be kept by him; or if (he is) of an inferior caste, she should be abandoned, and it is not possible to call her again, as declared by Bhúṭáḷapáṇḍya.

12. Bhúṭáḷapáṇḍya declared that, among the two castes Náyammár and Náyar, there is only Kanyákalyáṇam marriage, but not Svayamvaram marriage; that afterwards (the girls) may be given into the keeping of the persons of the same caste or those of a superior one, such as Bráhmans, &c.

13. As regards the Kaḍamba caste and Kumara Baḷḷáḷa, the girl may be given into the keeping of a male of the same caste or of the Kshatriya, Bráhman, &c; but if (the male) is of an inferior caste, she should be abandoned, as declared by Bhúṭáḷapáṇḍya.

14. As regards Stháníkás and Ambalavásís. If (the male is) not of the same or Bráhman caste but is of another inferior caste, she will be abandoned, as declared by Bhúṭáḷapáṇḍya.

15. Bhúṭáḷapáṇḍya said that a girl of Padárthí and Horapoduvaḷu may be taken into the keeping of the person of the same caste or of a superior one after Uḍige cloth shall have been given to (her).

16. As for Arasus (kings), a Bráhman may cause the marriage ceremony to be performed. As an Anyata gift is

made to the children born of him *(Arasu),* Bhúṭála-páṇḍya declared that the marriage ceremony may be performed by (fixing) pillars and (placing) pots, &c. If those Arasus are such as are incompetent to make the Anyata gift, Bhúṭálapáṇḍya said that it would not be possible to get the marriage celebrated according to the customs observed by the Bráhmans. Bhúṭálapáṇḍya also declared that during the occasion of auspicious and inauspicious ceremonies, Chauṭas and Bangaras will have to pursue the manners and customs observed by Brahmans; and the Chiṭupáḍi and Niḍambúr Baḷḷáḷás the Aliyasantána system during such occasions; and that from the class of Tuḷuvas down to that of a Návika the nepotism rules should prevail uniformly. Thus Bhúṭálapáṇḍya made the nepotism rules.

In the twelfth year after the installation of Bhúṭálapáṇḍya, Kesavaṇṇa and Basavaṇṇa, who were the learned men among the Jainas, were sent for from over the Gháts and rewards and presents were given them; after which they built the following cities. Barkúr and other fifteen cities for Kesavaṇṇa, and Mangalúr and fifteen other cities for Basavaṇṇa. Chauṭas and Chiṭupáḍi Baḷḷáḷás are the chiefs of Barkúr town, while Bangas and Niḍambúr Baḷḷáḷás are the chiefs of Mangalore town. In these thirty-two cities, thirty-two Bastis (Jaina temples) were built, and the suburbs in which Jainas and other persons of superior class lived, have been called Péṭa. Paṭṇaseṭṭi is the person that remains therein. The heads consisting of four, eight or sixteen in number, are Péṭe Hallaru. Those that collect in a Chatussanga are *Peṭejanaru* (or the people of suburbs.) If the people of four castes namely Bráhma, Kshatriya, Vaiçya and Çúdra collect in one place it is called Chatussanga. Those that sell different articles in the said Péṭe, are called merchants, while those that sell and purchase gold and silver are called Chinivároadavaru (or dealers in gold, &c.) The people that farm the duty on articles exported and imported into the Péṭa and also weigh them before themselves are Toládháris, and those that store all articles and get them sold by giving the same to different shopkeepers are Sáhukárs, while those that bring nine sorts of precious stones as well as cloths, and also those that bring nine sorts of grains on bullocks and export them on them are Çeṭṭigárs. If all these persons collect in one place they are called Sávakárs.

If houses be caused to be built by artificers on both sides of the road of the Péṭa, the same takes the name of Kéri, and a collection of drapers' shops lying in a line goes by the name of Maḷige, while great houses full of articles worth many thousands of Pagodas are known as Bhaṇḍásále. The street of Pánchálas (carpenters, braziers, blacksmiths, goldsmiths and stone-cutters) where gold and silver jewels are wrought as well as brazen and copper vessels, as also carpentry and turners' work are made, is called Pánchálakéri, and the place where potters, *Devaḍigas*, musicians live, is included in Kumbárakéri (Potters' street.) The street Samagárakéri contain Samagárs, washermen, barbers, tailors, &c., and Viyápárakeri street is that which is inhabited by Mlechchas, traders, &c. Súḷagéri is the street where dancing girls, Máleyaru, harlots, prostitutes, &c., live; Nishiddhakéri is the street where liquor, meat, &c., are sold; and if there are in the vicinity of this street the Paraya houses in a line, it is a Holagéri street. That which has no Kéris but only a Péṭa (a collection of shops) is known as Péṭa itself. If there are Kéris (with Péṭas) it is a town. Where there are ramparts round the town, and a fort in the centre, and also ramparts of the fort in the districts, and also where there is a king's rule, such place is termed Bandar, and if there is a lakh of houses therein, it will be called a Nagar, which, if it contain more than four lakhs of houses, will be known by the name of Jayanti.

The above thirty-two Nagars are as follow:—

Barkúru, &c. 16 Nagars, which have four lakhs of houses and Mangalore, &c. 16 Nagars, which have three lakhs of houses. The said 16 former Nagars are, 1 Barkúr, 2 Kaḍama, 3 Múḍabidre, 4 Kárkáḷa, 5 Basarúr, 6 Bangáḍi, 7 Paḍubidre, 8 Yeṇúr, 9 Kápu, 10 Mudráḍi, 11 Surálu, 12 Nárávi, 13 Yeramáḷa, 14 Aḷavu, 15 Muṇḍkúr, and 16 Bailangaḍí. These are Pèṭa, Paṭṭaṇa, Bandar, Nagar, &c., relating to Kesavaṇṇa. The Nagars formed by Basavaṇṇa are 1 Mangalúru, 2 Kásaragóḍu, 3 Múlki, 4 Viṭṭhala, 5 Uḷḷála, 6 Banṭwáḷa, Maṇélu, 8 Uḍupi, 9 Paṇambúru, 10 Nellikára, 11 Manjéçvara, 12 Néranki, 13 Páṇi Mangalore, 14 Maradáḷa 15 Valalanke and 16 Sulya.

These are the cities founded by Basavaṇṇa. Here end these rules of Bhútáḷapáṇḍya.

Particulars of the classes following the Aḷiyasantána rules.

1 Bágeṭṭiṇáya, 2 Bonyaṇṇáya, 3 Pulyaṭṭaṇáya, 4 Sálaṇṇáya, 1 Bangaraṇṇáya, (belonging) to the class of Iravattúr. It is not customary to give male and female (children) to this (class). 2 Kundalaṇṇáya, 3 Pangalaṇṇáya, 4 Karbúraṇṇáya. These four classes are the same. There exists relationship between the abovementioned four classes such as Pulyaṭṭaṇṇáya, &c., while it does not exist between the three classes, namely Bargaḍaṇṇáya, Kellarabaṇṇáya and Hirébaṇṇáya. The two classes Uppuraṇṇáya and Uddaraṇṇáya are the same, as also the two classes Kóchaṭṭibaṇṇáya and Kóchiraṇṇáya. Even the two classes Sálabaṇṇáya and Aiyabaṇṇáya are the same, as also the two classes Nelabaṇṇáya and Ujaṭṭibaṇṇáya. The four classes Uḷibaṇṇáya, Kundónibaṇṇáya, Karambaraṇṇáya, and Barmaraṇṇáya have not any special classes proximate to them. Relationship is formed by them in all the classes. Total classes* 18.

* These are only 16 classes, if calculated. S. A.

The rules made by Bhútáḷapáṇḍyaráya under the title of Aḷiyasantána and the causes which led to their origin, have been printed here on the authority of two copies, which, though containing several mistakes, have been corrected as far as possible. However, as copies sufficiently correct were not procurable, slight mistakes may have been left here and there. The people of this Tuḷu country purchase these rules which are printed here, and so, if all the copies are exhausted, and it appear proper that the said work should be re-printed, and good and correct copies be then procurable, an attempt will be made to rectify even the mistakes that have here been left behind.

The short story of Bhútáḷapáṇḍya, as also his rules, contain some circumstances which are to be considered minutely, and all those that are fond of truth should try to consider and know the same.

Respecting the story. We do not discuss here for the present whether Bhútarája (king of demons) existed or not. However, it is true that there are Bhútarájas and Piçáchás. Nevertheless, the assertion that Devapáṇḍya's ships sailed to a dark island covered with snow and there stuck to a miry bank is liable to suspicion. As Hindús are not acquainted with geography, it will not be surprising that if ships had ever sailed to a distant country never resorted to before by any body, and returned from their voyage, a story should have been invented to the effect that the ships returned after performing a voyage to a dark island covered with snow. If (we) sail westward we do not find anywhere a dark island covered with snow.

It is stated that on Dévapáṇḍya's wife saying she would not give any of her sons as a sacrifiçe, Dévapáṇḍya's younger sister, Satyavatí, prepared

herself to give Bhútá!apándya, otherwise called Jayapándya, as a sacrifice; that thereupon, all the riches that came on the ships of the said Devapándya were, for reason of the human sacrifice aforesaid, obtained by the sister's son of Bhútálapándya instead of by the children (sons); and that, therefore, the Aliyasantánadu Katturules have been made to the effect that for the future the rulers and the subjects should get (their) maternal uncles' estates just as the sister's son Bhútálapándya obtained his. If Devapándya's wife relinquished her claim to his property in order that her children's lives should be spared, even at the loss of property, rather than be offered as a sacrifice at a certain place and time, it is not just that it should be presumed that the wife of every one would behave in the same manner, and that so the Aliyasantána system should be introduced on setting aside the Makkalasantána system.

As regards rules: it has been told that the people of three castes such as Kshatriyas, Vaiçyas, and Çúdras have to follow the Aliyasantána (system) while Brahmans have to pursue that of the Makkalasantána. As the Brahmans were men of learning, wisdom and expertness, it was not possible to subject them to the Aliyasantána system, but, as the other caste people were weak in sense, Bhútálapándya made this rule for them. It is a timid person that is often put to fright*(a)*; otherwise, why were Brahmans not interfered with and this burden thrown upon the weak castes such as Bantaru and Vakkaluru?

The Aliyasantána rules only entailed loss, ruin and distress on the people, but the people have not derived any advantage therefrom. All the possessions of Bantas, Vakkals, &c., have for the most part become the property of the Brahmans, Musalmans and Christians. Any man would naturally have a great affection for his children and not for his nephews (sister's sons): consequently the manager of the estate alienates the land, &c. by mortgage or sale, and gives away the money to his wife and children in secrecy. The sister's sons, when they become heirs, succeed not only to the assets but also to debts contracted to any extent he chooses. The property falls into the hands of others. Moreover, what will be the fate of the children? Since they (the managers) attempt to keep in secrecy the money obtained by them illegally, even that (money) would almost fall away into the hands of others (strangers), and so (it) is neither for children nor for sisters' sons.

As sin, injustice, and vice increase in men, numbers of suits arise, even among the children of the same mother. Nephews (sister's sons) are not generally the sons of the same mother. Devapándya had only one sister and sister's son, (wherefore) every thing passed here smoothly. However if a person had two, three, four or five sisters and these have twenty or thirty children, it is very seldom that good understanding will exist among them all. While each of these sisters has been endeavouring to get the estate for her children, great injustice and deceit were practised and, suits being instituted (in regard to the same), the estate itself was sold to a merchant before the settlement of all (points therein.) Even the ready money was expended on account of Vakíls' fees, false documents, false witnesses and also on account of bribes (to be given) to Gumáshtas and Munshis. Thus, the property, wealth, money, honours, happiness and pleasure of the followers of Aliyasantána system having fallen short (by degrees), the curse pronounced by Bhútálapándya to the effect that the line of the family should become extinct has come to pass. This however, is not owing to deviation from

(a) This is a proverb:—ಹೆದರುವವನಂನು ಹೆದರಿಸುವದು ಹೆಚ್ಚು.

these rules but to adherence thereto. It is because the Musalmans and Christians of this very Tulu country act against Bhútálapándya's rules, that they live happily. But those that do not trangress the rules of Bhútálapándya, will in course of days, turn poor and come to decline.

Since these rules run counter to the dictates of nature and also cause injustice, poverty and various difficulties, all that follow the Aliyasantána system should consider whether they have any means of giving up these rules.

An easy course to be pursued is as follows.

There is a Legislative Council at Calcutta, the capital of Hindústan, by means of which even the followers of the Aliyasantána system may get their object accomplished. The wise Hindú gentlemen of Bengal having taken a view of the difficulties arising from the prohibition of the re-marriage of widows addressed the Legislative Council requesting that, if the re-marriage of widows should take place, the children born of them may be allowed to have a claim to inherit. The Legislative Council passed an Act acccordingly, which received the assent of the Governor General. If all the gentlemen of the Tulu country following the Aliyasantána rules, would likewise consent to Makkalasantána (inheritance in the line of sons) and so present their address to the Legislative Council, there is no doubt that the Aliyasantána system would be done away with and the Makkalasantána system introduced in its stead. Even though all (the said families) should not join together; yet, if the sister's sons and sons of one family at least, would concur and make an address to the effect that the Makkalasantána system should be made to prevail among them thenceforward, there would be no hindrance to such Makkalasantána system taking effect among them alone. However in so doing it will not be proper to recognize merely the son's right to the exclusion of the daughters, as do the Brahmans who are the followers of Makkalasantána system. If a petition be presented to the effect that in case of the introduction of the Makkalasantána system the male and female children may reciprocally have an equal title like the nephews (sister's sons) and nieces in a family governed by Aliyasantána rules, there will be no obstacle to the petition being complied with accordingly.

In speaking of the rules of this Bhútálapándya, we have voluntarily omitted the religious matters: though the several religions have a connection with the circumstances and rights of the peoples (that respectively profess the same), yet we have left those matters alone, and mentioned here only what is advantageous to the community for the present. If all who read this, especially the followers of the Aliyasantána system, will consider what is said here through affection (for them) and make their attempts, so as to improve themselves for the future, we, and at last they also, will derive happiness. Let God shew favour to all!

NOTE *by the Translator*:—The original hereof, besides containing words from the Old-Canarese, the Tulu and the Sanskrit languages, is also unintelligible here and there because of omissions of verbs and mistakes in the use of tenses and cases. As I was directed to translate closely, I beg to be excused for the unidiomatic expressions which must always be found in a literal version.

M. O. SINGALA'CHA'RIYA'R.

June 1864.

1862.		Mean Barometer reduced to 32° Faht.	Corrected Mean Temperature.		Self Registering Thermometers.				Deduced	
					Shade		Sun	Grass		
			Dry	Wet	Max.	Min.	Max.	Min.	Dew Point.	Humidity.
		Inches.	°	°	°	°	°	°	°	Per ct.
January; first half.	1	29·950	74·6	68·2	79·6	68·7	87·9	65·5	64·8	73
	2	29·953	73·4	68·5	81·2	71·2	97·2	69·5	66·0	78
	3	29·960	72·8	70·4	77·3	68·7	—	67·0	69·3	89
	4	29·987	76·5	73·9	79·9	71·9	99·5	72·0	72·8	89
	5	29·970	77·4	74·1	82·5	72·7	105·2	72·2	72·7	86
	6	29·976	76·7	73·3	82·4	70·7	111·8	69·0	71·8	85
	7	29·988	77·5	73·6	83·0	71·7	108·9	69·0	71·9	83
	8	29·934	77·9	73·6	83·9	73·7	109·5	71·2	71·8	82
	9	29·914	77·5	73·9	83·9	71·2	104·3	68·8	72·3	85
	10	29·940	77·4	74·0	83·5	72·8	104·9	70·6	72·5	85
	11	29·977	77·9	73·4	82·7	74·2	105·7	70·5	71·4	81
	12	29·980	75·6	72·0	82·4	70·1	103·6	66·8	70·3	85
	13	29·962	76·4	71·2	82·4	70·2	106·7	66·4	68·7	78
	14	30·000	75·9	70·9	81·9	67·7	102·9	62·9	68·5	79
	15	30·022	76·9	71·6	82·2	70·7	104·7	67·3	69·1	78
Mean....		29·968	76·3	72·2	81·9	71·1	—	68·6	70·3	82
Average.....		30·004	74·6	68·9	80·0	69·1	—	64·7	66·0	76
Difference...		— 0·036	+ 1·7	+ 3·3	+ 1·9	+ 2·0	—	+ 3·9	+ 4·3	+ 6
January, second half.	16	30·027	75·6	69·8	80·8	67·6	107·7	64·0	66·9	76
	17	30·016	75·1	68·8	81·2	67·4	108·0	63·1	65·6	73
	18	30·038	75·4	69·0	81·5	67·2	110·7	63·7	65·7	73
	19	30·034	75·9	69·7	81·0	67·2	106·8	63·0	66·6	74
	20	30·022	76·5	69·6	81·7	71·9	103·4	68·0	66·1	71
	21	30·009	74·1	67·3	80·3	69·3	104·0	65·9	63·6	71
	22	30·028	75·1	66·9	80·7	69·7	105·4	64·9	62·3	66
	23	30·002	75·7	68·1	81·4	70·2	104·6	66·2	64·0	69
	24	29·992	75·7	68·1	80·4	68·7	102·4	67·4	64·0	69
	25	29·993	74·6	67·6	80·9	68·7	103·4	64·0	63·8	70
	26	29·943	73·4	67·8	81·2	66·5	104·7	63·5	64·8	76
	27	29·868	72·2	69·4	80·7	64·6	105·0	60·3	68·0	87
	28	29·875	74·8	71·0	81·7	66·7	108·9	63·1	69·2	84
	29	29·938	75·4	70·0	81·8	68·3	109·0	65·2	67·3	77
	30	29·950	75·5	69·7	82·3	67·7	104·7	64·0	66·8	76
	31	29·935	74·1	68·3	81·5	68·9	106·1	65·5	65·2	75
Mean.........		29·979	74·9	68·8	81·2	68·2	105·9	64·5	65·7	74
Average....		29·991	74·5	68·6	80·6	68·2	—	65·2	65·5	75
Difference...		— 0·012	+ 0·4	+ 0·2	+ 0·6	0·0	—	— 0·7	+ 0·2	— 1

Rain	Wind.				Per centage of clouds.	Weather.
Five feet from ground.	Velocity.		Direction.			
	A. M.	P. M.	A. M.	P. M.		
Inches.	Miles.	Miles.	Points.	Points.		
—	105	116	0	1	97	Overcast.
—	94	129	31	1	30	Fine.
0·02	105	139	31	1	100	Overcast.
0 05	110	97	3	4	60	do. till night.
—	73	35	5	11	37	Light clouds, clear night.
0·02	31	75	11	8	47	Light clouds.
—	29	61	9	10	80	Nearly overcast.
0·05	66	63	10	14	30	Light clouds.
0·07	42	78	17	14	53	Cloudy.
0·17	57	56	17	13	67	Showery.
—	53	66	13	11	73	Cloudy.
—	28	74	10	11	53	Fine.
—	60	41	11	12	37	do.
—	27	66	11	9	10	do.
—	41	68	9	9	23	do.
0·38	139 per day.		E		53	
0·64	139 per day.		N E		42	
—0·26	0		4 Points E		+11	
—	29	69	8	8	27	Nearly fine.
—	42	68	8	8	27	do.
—	52	62	7	6	27	Light clouds.
—	44	69	6	6	37	do.
0·11	82	94	6	6	53	do.
—	62	80	3	3	40	do.
—	46	87	3	5	40	Flying clouds.
—	83	107	5	5	43	do.
—	78	115	4	5	33	Light clouds.
—	81	86	5	4	33	do.
—	47	72	3	4	63	Cloudy.
—	32	48	1	7	63	do.
—	30	65	5	6	50	Light clouds.
—	42	76	6	5	37	Fine.
—	64	40	5	3	53	Light clouds.
—	54	65	3	6	53	do.
0·11	129 per day.		N E b E		42	
0·37	133 per day.		N E b E		31	
—0·26	— 4		None.		+11	

1862.	Mean Barometer reduced to 32° Faht.	Corrected Mean Temperature.		Self Registering Thermometers.				Deduced	
				Shade		Sun	Grass		
		Dry	Wet	Max.	Min.	Max.	Min.	Dew Point.	Humidity.
	Inches.	°	°	°	°	°	°	°	Per ct.
February, first half. 1	29·916	74·6	68·2	81·6	67·2	105·3	63 3	64·8	73
2	29 923	74·3	68 9	81·3	65·7	107 7	63·5	66 1	76
3	29 911	75 7	69 6	82·9	69·4	110·9	66 0	66 5	75
4	29 900	74·7	70·4	82·0	67 5	105 5	63·9	68 3	82
5	29·939	76 1	70·6	82·1	66 4	103 5	62 8	67 9	77
6	29·985	76 1	70·0	83·1	67·2	108·9	63 6	66·9	75
7	29·990	75·0	69·0	82·3	66·7	107·6	62 8	65 9	74
8	30·006	74 8	66·8	81·7	68·3	101 9	63·8	62 3	66
9	30·040	74·7	66·2	81·0	66·5	107·7	63·5	61·3	64
10	30·018	75.7	67·9	82·0	69 5	105·0	65·0	63·7	68
11	30·011	75·7	69 7	82 1	66 5	108·0	62 8	66·7	75
12	30·041	78·4	72·4	83 3	75·1	106·1	72·0	69 6	75
13	30 022	76·2	71 7	81 0	76·8	96 7	74·0	69 6	81
14	29·999	78·5	72·4	84 0	75 9	108 0	73·4	69·6	75
Mean	29·979	75·8	69 6	82·2	69·2	105·9	65·7	66·5	74
Average..	29·982	75·6	69·8	81·8	69·0	103·2	65·7	66·9	75
Difference ..	− 0 003	+ 0·2	− 0·2	+ 0·4	+ 0·2	+ 2·7	0·0	− 0·4	− 1
February; second half. 15	29·960	77 7	70 9	83·6	72·0	107·7	69 0	67·6	73
16	29·959	77·3	70·8	84·0	71·2	109·8	69·4	67·6	73
17	29·943	77·0	70·4	83·5	70·1	105·7	67·3	67·1	73
18	29·947	76 3	70·7	82·9	69·5	104·9	67·1	67·9	77
19	29 968	75·9	70 5	82·8	66·7	109·5	63 5	67·9	77
20	29·948	77 5	68·6	83·8	67·2	109·7	62·4	63·8	64
21	29·908	75·4	67·7	84 8	65·6	109·0	61·2	63·5	65
22	29·911	74·9	69·4	84·5	65·6	106·4	61·2	66·7	76
23	29·915	74·9	69·5	84·0	64·9	105·7	60·0	66·8	77
24	29·930	74·6	70·3	84·2	65 9	105·2	61·1	68·2	82
25	29·930	76 0	70·3	83·7	66·9	105·7	62·8	67·5	76
26	29·874	73·7	67·7	83·3	65·9	105·9	61·5	64·5	74
27	29·849	76·8	67·3	88 1	63·5	103·4	58 3	61·9	61
28	29·883	79·4	75·1	87·5	70·7	106·1	67·0	73·3	82
Mean...	29·923	76·2	69·9	84·3	67·6	106·8	63·7	66·8	74
Average.....	29·958	76·9	70·8	83·8	69·7	103·9	64·2	67·9	75
Difference...	−0·035	− 9·7	− 0·9	+ 0·5	− 2·1	+ 2·9	− 0·5	− 1·1	− 1

Rain	Wind.				Per centage of clouds.	Weather.
	Velocity.		Direction.			
Five feet from ground.	A. M.	P. M.	A. M.	P. M.		
Inches.	Miles.	Miles.	Points.	Points.		
—	44	70	5	5	30	Light clouds : clear night.
—	60	66	3	5	33	Hazy : clear at night.
—	42	70	3	5	37	Hazy..
—	42	60	5	9	43	Nearly fine.
—	54	31	7	6	23	Fine.
—	58	78	6	7	23	Nearly fine.
—	39	92	3	5	73	Chiefly overcast.
—	92	79	7	5	57	Cloudy.
—	72	75	5	5	57	do.
—	77	90	5	6	47	do.
—	68	103	5	5	37	Light clouds.
—	101	128	5	5	87	Chiefly overcast.
—	111	107	4	3	100	Overcast.
—	90	99	3	3	73	Cloudy.
0·00	150 per day.		N E b E		51	
0·27	125 per day.		East		28	
—0·27	+ 25		3 Points N		+23	
—	42	75	2	6	47	Hazy.
—	48	114	3	4	43	do.
—	48	104	1	2	60	Light clouds.
—	49	91	2	3	27	Fine.
—	39	83	1	3	17	do.
—	38	67	3	5	20	do.
—	33	60	6	8	0	do.
—	37	51	12	11	0	do.
—	33	54	13	8	0	do.
—	39	43	10	10	0	do.
—	38	61	11	10	3	Light haze.
—	37	44	10	8	13	Fine.
—	35	73	12	13	17	Light haze.
—	73	71	18	14	17	Nearly fine.
0·00	113 per day.		E b N		19	
0 05	119 per day.		E S E		23	
—0·05	— 6		3 Points N		— 4	

1862.	Mean Barometer reduced to 32° Faht.	Corrected Mean Temperature. Dry.	Corrected Mean Temperature. Wet.	Self Registering Thermometers. Shade. Max.	Shade. Min.	Sun. Max.	Grass. Min.	Deduced Dew Point.	Deduced Humidity.
	Inches.	°	°	°	°	°	°	°	Per ct.
March; first half.									
1	29·896	79·4	74·8	86·9	71·7	102·9	67·0	72·9	81
2	29·886	79·6	73·5	87·9	73·9	105·4	70·7	70·8	76
3	29·908	80·5	74·5	88·6	73·6	105·9	69·0	71·9	76
4	29·963	79·2	72·7	86·4	72·0	103·5	67·5	69·7	73
5	29·930	79·1	72·6	86·9	71·3	106·3	66·7	69·6	73
6	29·934	78·5	71·8	86·1	71·3	100·3	67·8	68·5	73
7	29·975	79·1	72·6	86·3	71·5	103·7	67·2	69·6	73
8	29·986	78·4	71·1	86·3	69·7	104·4	65·2	67·6	71
9	29·947	78·8	71·6	86·1	69·9	109·9	66·5	68·2	71
10	29·894	80·2	74·9	87·0	71·9	105·1	68·3	72·7	77
11	29·888	81·5	75·7	89·1	73·9	106·7	70·4	73·3	77
12	29·940	80·8	75·3	88·7	74·2	106·8	70·4	73·0	78
13	29·966	80·8	74·4	88·1	73·3	110·9	70·0	71·6	74
14	29·995	80·4	73·8	88·2	74·2	109·7	70·8	70·9	74
15	30·007	79·4	71·2	86·7	71·7	107·7	67·6	67·2	67
Mean......	29·941	79·7	73·4	87·3	72·3	105·9	68·3	70·6	74
Average.....	29·920	78·9	72·7	85·5	71·7	105·1	67·5	69·9	75
Difference..	+ 0·021	+ 0·8	+ 0·7	+ 1·8	+ 0·6	+ 0·8	+ 0·8	+ 0·7	— 1
March; second half.									
16	29·979	78·1	71·0	87·0	71·7	110·8	67·5	67·8	72
17	29·938	77·2	72·6	96·4	69·8	109·5	65·2	70·5	81
18	29·912	78·6	73·5	87·3	69·8	108·6	64·8	71·3	79
19	29·938	79·8	73·4	87·1	72·5	112·9	68·6	70·6	74
20	29·909	78·7	72·4	87·9	71·4	108·0	67·2	69·5	74
21	29·854	79·0	70·8	90·8	71·3	117·4	67·5	66·8	67
22	29·836	78·7	69·1	90·7	69·4	116·5	63·3	64·1	62
23	29·835	78·6	68·9	90·9	66·1	113·6	64·7	63·7	62
24	29·857	80·9	73·2	89·8	68·7	114·2	64·0	69·7	70
25	29·886	81·3	75·1	90·5	73·2	114·3	69·4	72·5	75
26	26·870	81·6	75·3	91·1	77·0	113·7	74·8	72·7	75
27	29·850	82·2	75·6	89·4	75·7	118·8	73·8	72·8	74
28	29·883	82·5	77·3	89·6	78·3	105·2	75·6	75·3	79
29	29·917	81·4	76·6	89·2	77·7	105·2	76·1	74·7	81
30	29·867	83·0	75·8	91·2	75·0	108·7	71·0	72·8	72
31	29·886	85·0	76·7	91·7	77·3	108·2	73·4	73·3	69
Mean......	29·889	80·4	73·6	89·4	72·8	111·6	69·2	70·6	73
Average.....	29·886	80·9	74·9	87·5	74·2	108·6	69·8	72·4	76
Difference...	+ 0·003	— 0·5	— 1·3	+ 1·9	— 1·4	+ 3·0	— 0·6	— 1·8	— 3

Rain.	Wind.					
Five feet from ground.	Velocity		Direction.		Per centage of clouds.	Weather.
	A. M.	P. M.	A. M.	P. M.		
Inches.	Miles.	Miles.	Points.	Points.		
—	72	87	16	14	13	Fine.
—	68	96	19	14	10	do.
—	76	106	19	14	17	Light clouds.
—	60	111	17	13	27	Fine with passing clouds.
—	76	83	19	14	0	Fine.
—	64	74	17	15	13	do.
—	50	68	18	12	17	Flying clouds.
—	31	73	17	9	17	Light clouds.
—	36	92	2	12	10	Fine.
—	71	84	8	12	13	do.
—	55	101	19	13	20	Light clouds.
—	47	101	16	12	13	Fine.
—	36	64	12	11	40	Frequent clouds.
—	52	79	11	8	30	do.
—	41	98	7	6	30	Light clouds.
0·00	143 per day.		S S E		18	
0·05	123 per day.		S E		23	
— 0·05	+ 20		2 Points S		— 5	
—	44	65	5	5	17	Fine.
—	45	57	3	7	10	Light clouds.
—	47	45	5	7	40	Cloudy.
—	27	77	4	7	43	do.
—	42	64	5	7	7	Fine.
—	45	29	30	7	0	do.
—	51	50	30	6	23	Light haze.
—	34	67	26	6	17	Fine.
—	44	56	26	6	7	do.
—	34	97	25	3	27	Light clouds.
—	102	81	30	3	33	Flying clouds.
—	56	43	27	8	23	Fine with passing clouds.
—	79	96	17	15	37	Flying clouds.
0·01	85	75	16	14	37	do.
—	61	108	18	14	7	Fine.
—	95	95	17	13	40	Frequently clouded.
0·01	125 per day.		E N E		23	
0·32	101 per day.		S S E		28	
—0·31	+ 24		8 Points N		— 5	

1862.		Mean Barometer reduced to 32° Faht.	Corrected Mean Temperature.		Self Registering Thermometers.				Deduced.	
					Shade.		Sun.	Grass.	Dew Point.	Humidity.
			Dry.	Wet.	Max.	Min.	Max.	Min.		
		Inches.	°	°	°	°	°	°	°	Per Ct
April; first half.	1	29·888	83·2	76·5	90·2	76·9	107·8	73·8	73·8	74
	2	29·867	83·5	76·0	91·2	75·1	107·7	71·0	72·9	71
	3	29·862	82·9	75·2	90·5	75·5	10[illegible]·7	71·4	71·9	71
	4	29·886	81·8	75·6	89·6	73·0	103·1	68·4	73 0	75
	5	29 917	80·8	73·2	88·7	72·5	102·4	67·8	69·7	70
	6	29·922	80·5	73·2	88·5	70·6	104·2	66·0	69·7	70
	7	29 881	81·3	73·9	89·3	71·7	107·7	66·7	70·6	71
	8	29·862	81·1	75·6	90·9	71·6	115·5	67·0	73·3	78
	9	29·371	82·2	74·9	90 2	72·8	108·3	68·2	71·8	72
	10	29·892	82·2	75·2	92·3	72·2	113·2	67·4	72·2	73
	11	29·928	81·8	75·2	90 5	72·5	111·2	68·1	72·4	74
	12	29 941	81·0	74·9	90·9	72 8	112·6	69·2	72·3	76
	13	29·955	82·3	75·8	91·6	72·2	114·5	66·8	73·1	74
	14	29 894	83·0	76·9	90 7	73·7	108·2	69 4	74·5	76
	15	29 835	84·8	76·3	94·0	76·6	116·1	71·9	72·8	68
Mean		29 893	82·2	75·2	90·6	73·3	109·3	68·9	72·2	73
Average......		29·843	83·1	77·0	90·0	77·4	107·6	71·3	74·6	76
Difference...		+ 0·050	— 0·9	— 1·8	+ 0·6	— 4·1	+ 1·7	— 2 4	— 2·4	— 3
April; second half.	16	29·803	84·7	78·6	93·0	78·6	114·3	75·9	76·3	77
	17	29·804	85·4	79·6	93·6	79 6	114 2	77·2	77·5	78
	18	29 790	85·4	80·5	92·3	69·8	111 7	78·0	78 8	81
	19	29·777	85·4	81·9	92·7	80 8	108·1	79·0	80·7	86
	20	29·805	85·3	82·3	91·8	81·1	106·3	79·2	81·3	88
	21	29 831	85 2	80·9	91·9	80·8	107·1	79·0	79·4	83
	22	29·859	83·4	76·5	91·5	79·3	104 7	77 0	73 7	73
	23	29·858	83·6	76·1	91·7	75·1	109·3	71 2	73·0	71
	24	29·821	84·9	77·4	93·2	75·9	113·5	72·6	74·4	71
	25	29·755	85·3	79·3	92 9	77·8	110·8	74·7	77·1	77
	26	29·703	86 1	80·8	93 3	79·8	108·7	78 0	78·9	80
	27	29·718	86·1	81·7	92 5	81·2	107·3	79 0	80 2	83
	28	29 737	86·4	82·8	93·8	81·3	107·7	78 7	81·6	86
	29	29·742	86·2	83·2	93·2	81·8	108 0	79·8	82·3	88
	30	29·724	86·6	84·2	92·5	81·8	110·9	79·5	83·4	94
Mean......		29·782	85·3	80·4	92·7	79·6	109·5	77·3	78 6	81
Average,....		29·806	84 0	77·6	91·0	78·4	—	76·4	75·1	75
Difference...		— 0·024	+ 1·3	+ 2·8	+ 1·7	+ 1·2	—	+ 0·9	+ 3·5	+ 6

Rain.	Wind.					Weather.
Five feet from ground.	Velocity.		Direction.		Per centage of clouds.	
	A. M.	P. M.	A. M.	P. M.		
Inches.	Miles.	Miles.	Points.	Points.		
—	67	116	16	14	40	Light clouds.
—	65	105	17	15	37	do.
—	67	90	19	15	0	Clear.
—	71	84	18	15	7	Fine.
—	79	59	16	14	7	do.
—	39	69	15	11	3	do.
—	49	74	17	13	0	do.
—	73	63	19	15	60	Cloudy.
—	54	77	17	14	0	Fine.
—	55	87	19	13	0	do.
—	37	71	21	11	7	do.
—	52	59	19	14	13	Light haze.
—	43	63	14	13	3	Fine.
—	48	86	16	14	0	do.
—	72	105	18	14	27	Hazy.
0·00	139 per day.		S b E		14	
0.16	145 per day.		S S E		26	
—0·16	— 6		1 Point S		—12	
—	90	118	16	15	7	Fine.
—	87	110	18	15	7	do.
—	108	99	18	15	27	Light clouds.
—	134	105	17	13	0	Fine.
—	118	114	16	14	27	Flying clouds.
—	101	111	15	14	30	do.
—	88	78	15	14	30	Light clouds : clear night.
—	51	100	14	14	13	Hazy.
—	56	110	16	14	13	Fine with passing clouds.
—	87	95	17	14	10	Light haze.
—	92	131	17	14	7	Fine.
—	134	95	17	14	13	do.
—	101	123	16	15	17	Hazy.
—	113	122	15	14	23	Frequently clouded.
—	104	116	16	13	40	Fine with passing clouds.
0·00	206 per day.		S b E		18	
0·65	146 per day.		S b E		34	
—0·65	+ 60		None.		—16	

1862.	Mean Barometer reduced to 32° Faht.	Corrected Mean Temperature.		Self Registering Thermometers.				Deduced.	
				Shade.		Sun.	Grass.		
		Dry.	Wet.	Max.	Min.	Max.	Min.	Dew Point.	Humidity.
	Inches.	°	°	°	°	°	°	°	Per c
May ; first half. 1	29·772	85·6	82·6	93·0	80·8	105·5	78·8	81·6	88
2	29·761	85·9	79·5	93·0	80 5	106·2	77·2	77 2	76
3	29 783	86·4	79·2	93·4	80·4	106 0	78 0	76·5	73
4	29·826	86·3	78 8	93·5	80·6	107·7	78·2	75·9	72
5	29·866	86·2	77 9	94·5	80·7	109·5	77 8	74·7	69
6	29·815	85·5	78·3	91·3	80·2	103·4	78·0	75·6	73
7	29·816	80·7	74·1	87·3	79·1	100·2	77·0	71·2	74
8	29·792	85·9	77·1	96·2	76·0	116 0	72·4	74·4	74
9	29·828	87 2	78·2	93·3	78·6	113·7	75·5	74·7	67
10	29·816	85·2	77·6	93·5	78·6	114·6	76·0	74·6	71
11	29·766	86 6	76·9	94·5	78·6	113·9	76·0	72·9	65
12	29·712	88·2	79 4	97 2	80·6	113·6	78·8	76·1	69
13	29·742	89·0	77·1	97·7	81·3	116·8	77·5	72·2	59
14	20·792	90·0	79·4	101.1	82·6	116·1	79 8	75·4	63
15	29·796	89·8	78·9	100·3	82·7	117·6	80·0	74 7	62
Mean.........	29·792	86·6	78·3	94 7	80·1	110·7	77·4	75·2	70
Average.....	29·756	85·3	78·1	93·0	79·8	110·8	77·5	75·4	73
Difference...	+ 0·036	+ 1·3	+ 0·2	+ 1·7	+ 0·3	—0·1	— 0·1	— 0·2	— 3
May ; second half. 16	29·752	87·6	77·5	106·8	83·3	122·2	78·5	73·4	64
17	29·721	87·8	78 5	106·1	81·6	124·5	77·8	74·9	67
18	29·749	90·6	79 6	103·4	82·3	122·5	79·1	75·4	62
19	29·811	88·9	74·8	101·2	82·7	115·0	80·3	68·4	53
20	29·776	89·6	77·6	100·7	82·0	115·5	78·5	72·7	59
21	29·725	89·4	78·5	102·0	83·4	117·7	80·3	74·2	62
22	29·746	89·5	77·8	99·1	82 6	117·7	80·9	73 1	60
23	29·824	84·3	79·0	95·2	76·8	112 7	71·6	77·0	79
24	29·829	86·3	79·6	95·0	81·0	109·5	79·2	77·1	75
25	29·807	87·6	79·6	97·4	80·8	110 7	79·0	76·7	71
26	29·761	89·2	79·8	97·6	81·8	113·5	79·8	76 3	67
27	29·746	90 0	79·2	97·5	81·8	113·0	78 9	75·1	63
28	29·714	89·6	77·0	103·5	82·6	119·7	79 8	71·8	57
29	29·689	90·1	77·7	103·9	83·4	122·0	80·3	72·7	58
30	29·675	88·3	79·9	107·1	82·8	121·5	78 5	76·8	70
31	29·701	90·3	78·2	101·9	79·8	109·5	76·0	73·4	59
Mean.........	29·752	88·7	78·4	101·2	81·8	116·7	78 7	74·4	64
Average.....	29·707	86·2	77·5	95·1	80·4	115·3	78·3	74·1	68
Difference...	+ 0·045	+ 2·5	+ 0·9	+ 6·1	+ 1·4	+ 1·4	+ 0·4	+ 0·3	— 4

Rain	Wind.				Per centage of clouds.	Weather.
	Velocity.		Direction.			
Five feet from ground.	A. M.	P. M.	A. M.	P. M.		
Inches.	Miles.	Miles.	Points.	Points.		
—	93	113	15	14	30	Light haze ; fine night.
—	91	128	15	14	17	Light haze.
—	95	122	17	14	43	Frequently clouded.
—	88	120	15	14	20	Hazy.
—	98	98	15	14	73	Cloudy.
—	78	102	17	4	70	Nearly overcast.
—	94	57	4	9	77	Cloudy. A slight dust storm from
—	49	102	14	9	23	Fine. [N. E. about 8½ A. M.
—	37	80	12	8	57	Hazy clouds.
—	36	66	10	8	60	Cloudy.
—	54	96	14	10	17	Fine.
—	83	121	16	12	40	Light clouds.
—	80	120	15	13	37	do.
—	124	127	16	14	60	Occasional clouds.
—	90	123	16	13	57	Frequent clouds.
0·00	184 per day.		S E by S		45	
1·32	157 per day.		South		39	
—1·32	+ 27		3 Points N		+6	
—	108	62	17	14	47	Light clouds till night.
—	119	88	19	15	40	Light clouds.
—	90	127	16	13	40	Morning fine ; afternoon cloudy.
—	99	88	16	17	37	do. ; do.
—	80	129	16	13	7	Fine.
—	131	156	16	13	7	do.
—	141	165	15	13	10	Hazy.
0·60	112	77	17	13	27	Rain about 6 A. M. with N. W. wind,
—	147	108	16	14	20	Light clouds. [fine afterward.
—	105	113	16	14	0	Fine.
—	124	98	16	13	13	do.
—	73	94	16	13	10	do. [ning.
—	112	60	19	15	40	Frequent clouds. Thunder and light-
—	122	92	20	15	53	Cloudy and threatening : do.
—	105	85	17	15	93	Overcast.
—	75	139	21	16	80	do.
0·60	214 per day		South		33	
1·60	195 per day		S S W		47	
—1·00	+19		2 Points S		—14	

1862.	Mean Barometer reduced to 32° Faht.	Corrected Mean Temperature.		Self Registering Thermometers.				Deduced.	
				Shade.		Sun.	Grass.		
		Dry.	Wet.	Max.	Min.	Max.	Min.	Dew Point.	Humidity.
	Inches.	°	°	°	°	°	°	°	Per ct
June ; first half. 1	29·752	79·6	75·7	93·5	73·8	114·2	73·0	74·1	83
2	29·735	86·8	79·5	96·4	78·1	114·5	76·0	76 8	73
3	29·752	87·3	79 6	94·7	80·6	111·7	78·6	76 8	72
4	29·715	87·9	80·9	96 8	80·1	115·5	78·2	78·4	74
5	29·669	88·3	79·8	101 1	81 6	118·3	79·3	76·7	69
6	29 679	87·5	78·6	102·6	79 0	121·5	76·8	75·2	68
7	29·700	85·1	80·5	97·7	73·6	113 4	73·0	78·9	82
8	29·732	87·5	79·5	97·9	80·6	112·5	77·4	76·6	71
9	29·725	88·6	80·9	100·9	81·4	116·3	80 2	78·2	72
10	29·691	88·0	80·6	102·1	82 6	115 6	80 2	78·0	73
11	29·668	91·7	75·2	103·6	82·6	114 6	79·8	67·8	47
12	29·704	90·5	72·3	103·9	81·8	115·4	79·0	63·1	42
13	29·743	87·3	77 8	95·2	81·6	109 8	80·4	74·1	65
14	29·759	88·3	76·8	1 01·1	82·4	115·7	8·10	72·1	59
15	29.749	87·0	76.4	101·2	82·6	114·5	79·4	72·0	62
Mean........	29·718	87·4	78 3	99·2	80·2	114·9	78·2	74·8	67
Average.....	29·692	86·6	76·7	95·8	80·7	111·7	77·5	72·7	64
Difference...	+ 0·026	+ 0·8	+ 1·6	+ 3·4	− 0·5	+ 3·2	+ 0·7	+ 2·1	+ 3
June ; second half. 15	29·678	88 2	76·9	99·1	83·1	111·8	81·3	72·3	60
16	29·707	82·9	77·1	94·7	78·1	113·3	75·5	74·8	78
17	29·750	83·1	74·5	90·4	79·6	95·5	76·3	70·7	67
18	29·756	85 9	76·5	100·0	80·6	116·2	78·0	72·6	66
19	29·747	82·7	77·8	94·8	76·6	116·7	73·2	75·9	80
20	29·701	86 0	76·6	95·6	77·6	113·0	74·7	72·7	66
21	29·672	87·2	75·8	96·7	78·1	116 9	74·0	70·9	60
22	29·666	87·1	77·0	95·7	79 6	116·5	76·5	72·9	64
23	29·682	84·9	77·8	100·5	79·6	116·8	75·0	75·0	74
24	29·679	86·5	76 5	94·0	79·6	101·5	76·4	72·3	64
25	29·651	86·3	75·8	96·7	80·7	107·1	78·2	71·3	62
26	29·604	89·9	76·1	100·7	80·6	111·5	77·2	70·1	54
27	29·598	91·1	74·9	99·7	83·0	108·5	77·5	67·5	48
28	29·597	87·4	75·0	99·6	84·0	110·9	80·8	69·5	57
30	29·618	88·2	76·0	98·2	77·6	111.5	74·4	70·8	58
Mean...	29·674	86·5	76 3	97·1	79·9	111·2	76·6	72·1	64
Average.....	29·704	85 0	76·1	93·7	79 4	108·9	77·3	72·4	67
Difference ..	− 0·030	+ 1·5	+ 0·2	+ 3·4	+ 0·5	+ 2·3	− 0·7	− 0·3	− 3

Rain.	Wind.				Per centage of clouds.	Weather.
Five feet from ground.	Velocity.		Direction.			
	A. M.	P. M.	A. M.	P. M.		
Inches.	Miles.	Miles.	Points.	Points.		
0·16	92	50	22	15	70	Cloudy.
—	80	87	17	16	53	Hazy clouds.
—	64	122	16	14	20	Nearly fine.
—	83	118	18	13	30	Hazy.
—	106	160	17	14	20	Fine.
02·6	98	114	19	12	40	Changeable.
—	112	89	18	16	80	Nearly overcast.
—	129	102	19	14	57	Light clouds.
—	120	97	18	19	40	do.
—	77	132	22	17	57	Cloudy.
—	87	126	18	21	57	do.
—	108	136	19	17	53	Light clouds.
0·00	88	129	16	14	53	do.
—	83	97	20	15	70	Changeable.
	62	83	20	14	77	Heavy clouds.
0·42	202 per day.		S by W		52	
0·92	201 per day.		S W		60	
—0·50	+ 1		3 Points S		— 8	
0·57	84	128	18	15	50	Threatening and stormy.
0·25	57	62	16	18	70	Overcast.
—	53	57	23	14	93	do.
0·73	71	78	19	15	63	Flying clouds: thunder storm about [midnight.
1·09	120	70	20	14	67	Nearly overcast: light storm about [7 P. M.
—	80	107	21	12	23	Light clouds.
—	85	93	22	10	13	Nearly fine.
0·28	76	97	21	12	40	Cloudy: rain about 7 P. M.
0.01	57	80	22	16	40	Cloudy: light shower at 4 P. M.
—	84	80	22	18	70	Nearly overcast.
0·01	83	67	23	19	77	Cloudy: shower at 8 P. M.
0·04	78	93	21	19	67	Cloudy: rain at 7 P. M.
—	94	91	22	23	70	Nearly overcast.
0·27	101	104	23	26	90	Overcast: frequent showers.
—	68	88	18	18	70	Overcast: fall about 6 P. M.
3·25	166 per day.		S W by S		60	
1·29	190 per day.		S W		70	
+1·96	— 24		1 Point S		—10	

1862.		Mean Barometer reduced to 32° Faht.	Corrected Mean Temperature.		Self Registering Thermometers.				Deduced	
			Dry.	Wet.	Shade. Max.	Shade. Min.	Sun. Max.	Grass. Min.	Dew Point.	Humidity.
		Inches.	°	°	°	°	°	°	°	Per ct
July; first half.	1	29·689	87·9	76·1	97·6	81·4	112·6	76·8	71·1	59
	2	29·736	86·8	77·2	100·7	81·7	114·5	77·9	73·3	65
	3	29·738	86·9	78·7	97·6	80·6	113·5	78·4	75·6	70
	4	29·718	85·1	78·1	99·5	82·1	117·7	79·4	75·4	74
	5	29·673	87·0	78·7	98·7	79·6	109·5	76·4	75·6	70
	6	29·671	88·4	76·2	99·2	79·8	108·5	76·0	71·1	58
	7	29·684	83·6	76·2	97·2	77·2	105·3	76.2	73·2	72
	8	29·699	84·8	78·0	95·9	76·7	115·7	74·7	75·4	75
	9	29·704	84·2	78·7	95·0	78·8	105·5	76·5	76·6	78
	10	29·729	80·9	75·8	95·4	75·2	114·7	71·9	73·7	80
	11	29·688	82·2	77·7	95·6	73·7	112·0	72·0	75·9	82
	12	29·671	85·2	77·7	94·3	74·8	106·6	71·8	74·7	71
	13	29·721	86·8	78·6	98·5	78·8	108·6	74·6	75·5	70
	14	29·701	86·2	80·3	99·5	80·4	111·9	77·0	78·2	77
	15	29·659	85·6	78·6	96·7	79·6	109·7	76·2	75·9	74
Mean.........		29·699	85·4	77·8	97·4	78·7	111·1	75·7	74·9	72
Average.....		29·708	84·3	76·0	92·6	78·8	—	75·5	72·6	69
Difference..		— 0·009	+ 1·1	+ 1·8	+ 4·8	— 0·1	—	+ 0·2	+ 2·3	+ 3
July; second half.	16	29·692	86·5	79·7	97·8	80.4	111·2	78·0	77·2	75
	17	29·674	84·4	79·6	97·7	79.9	107·5	76·8	77·9	82
	18	29·704	86·0	78·2	96·5	80.6	117·0	77·4	75·2	71
	19	29·712	86·9	79·5	98·9	80.6	111·7	78·0	76·4	73
	20	29·713	85·9	80·2	98·1	80.8	110·9	78·2	77·8	75
	21	29·689	85·7	81·1	100·1	80.6	122·0	77·5	79·5	82
	22	29·660	86·8	79·7	99·7	79.6	112·5	76·4	77·1	74
	23	29·667	86·7	78·1	100·0	82.3	117·5	78·5	74·7	68
	24	29·689	86·6	77·6	99·7	81.6	119·5	77·6	74·0	67
	25	29·681	85·5	76·4	98·4	82.4	113·0	78·0	71·5	67
	26	29·665	85·8	77·1	98·7	79.1	111·0	75·3	74·0	71
	27	29·658	87·4	75·9	99·6	80.8	109·5	76·2	71·0	59
	28	29·684	87·0	77·5	101·0	81.8	114·5	77·0	73·7	65
	29	29·711	86·3	77·6	99·8	81.8	114·7	76·5	74·2	68
	30	29·713	84·9	77·9	94·7	78.8	103·6	73·8	75·2	74
	31	29·773	80·7	75·9	87·5	76·9	96·2	74·7	73·9	81
Mean.........		29·693	85·8	78·3	98·0	80·5	112·0	76·9	75·5	72
Average.....		29·721	83·9	75·6	91·9	78·4	—	75·5	72·1	69
Difference...		— 0·028	+ 1·9	+ 2·7	+ 6·1	+ 2·1	—	+ 1·4	+ 3·4	+ 3

Rain.	Wind.				Per centage of clouds.	Weather.
Five feet from ground.	Velocity.		Direction.			
	A. M.	P. M.	A. M.	P. M.		
Inches.	Miles.	Miles.	Points.	Points.		
—	74	94	21	15	57	Cloudy.
—	62	103	20	15	50	Fine morning: cloudy afternoon.
0·02	78	63	20	15	57	Cloudy: shower 0½ P. M.
0·23	88	66	18	15	57	Cloudy: rain from 1½ to 5 P. M.
0·06	64	85	19	18	73	Chiefly overcast: rain after 10½ P. M.
—	85	88	21	22	73	Overcast.
1·13	74	69	21	20	100	Overcast: rain from 5 to 9 P. M.
0·03	58	105	19	16	57	Cloudy: shower about 0¼ A. M
—	60	93	19	17	100	Overcast.
1·90	67	97	19	15	100	Overcast: heavy rain after 6 P. M.
0·86	88	101	20	17	70	Stormy: rain at 5 and 8 P. M.
—	77	78	21	18	83	Cloudy.
—	74	98	22	18	40	Light clouds.
—	89	93	21	17	47	do.
—	76	110	19	14	50	Occasional clouds.
4·23	164 per day.		S S W		68	
1·93	153 per day.		S W		74	
+ 2·30	+ 11		2 Points S		— 6	
—	77	99	18	16	33	Nearly fine.
—	70	96	20	17	83	Heavy clouds.
—	71	93	18	14	37	Light clouds.
—	77	100	18	16	57	Frequent clouds.
—	73	106	18	16	53	Hazy.
0·25	98	83	21	14	70	Cloudy: rain about 7 P. M.
—	77	100	19	16	37	Light clouds.
—	97	83	20	14	50	Cloudy.
—	78	84	20	13	47	Light clouds.
—	89	83	20	14	90	Overcast.
—	81	71	21	13	60	Hazy and dull.
—	75	83	20	18	77	Cloudy.
—	74	103	21	16	50	Light clouds.
—	89	78	21	15	20	Fine.
0·05	80	69	19	13	87	Overcast: shower about sun rise.
—	90	46	22	15	97	Overcast.
0·30	167 per day.		S by W		59	
1·98	156 per day.		S W by W		77	
– 1·68	+ 11		4 Points S		–18	

1862.	Mean Barometer reduced to 32° Faht.	Corrected Mean Temperature.		Self Registering Thermometers.				Deduced.	
				Shade.		Sun.	Grass.		
		Dry.	Wet.	Max.	Min.	Max.	Min.	Dew Point.	Humidity.
	Inches.	°	°	°	°	°	°	°	Per ct
August; first half. 1	29·793	83·0	77·9	90 7	77·4	102·5	72·1	75·9	80
2	29·775	86·6	78·2	96·9	78·7	111·5	74·1	75·0	69
3	29·757	85·8	77·3	95 2	80·6	111·4	75·2	73·9	68
4	29·780	79·2	76·2	85·0	71·1	90·6	67·8	75·0	87
5	29 776	83·8	78·6	91·7	77·6	107·1	73·6	76·6	79
6	29·728	83·8	77·1	91·5	77·4	105·5	72·8	74·4	74
7	29·699	83·3	76·0	88·9	76·6	103·7	72·5	73·0	72
8	29·685	82·1	74·2	92·3	78·1	100·7	71·5	70·7	69
9	29·660	83·2	74 7	92·9	77·1	104·7	71·0	71·0	67
10	29·665	81·1	75·3	92·3	78·0	105·2	71·7	72·9	77
11	29·686	78·1	76·4	94·5	76·7	108·5	72·2	75·7	92
12	29·656	83·7	77·9	93·5	76·8	106·0	71·2	75·7	78
13	29·690	83·6	77·9	95·1	77·1	107·9	72·2	75·7	78
14	29 761	84·5	77·6	97·3	76·6	112·5	72·3	74·9	73
15	29 785	86·0	76·2	97·7	77·8	107·5	73·0	72·1	65
Mean........	29·726	83·2	76·8	93·0	77·2	105·7	72·2	74·3	75
Average.....	29·749	83·5	76·0	91·6	78·1	—	72·5	72·9	71
Difference...	— 0·023	— 0·3	+ 0·8	+ 1·4	— 0·9	—	— 0·3	+ 1·4	+ 4
August; second half. 16	29·761	85·0	74·5	92·4	79·6	102·5	73·4	69·8	61
17	29·732	85·3	75·0	95·0	78·8	105·7	73·8	70·5	62
18	29·701	84·0	75·7	96·1	79·0	108·4	73·4	72·2	69
19	29·715	83·6	75·8	97 0	78·0	114·5	71·0	72·5	71
20	29·743	83·4	76·2	95 7	78·8	109·5	72·8	73·2	72
21	29·755	84·6	75·5	94·7	79·1	119·7	74·2	71·6	67
22	29·792	82·2	78·1	92·5	74·2	112·3	69 5	76 5	84
23	29·780	83·5	78·1	92·7	76·1	108·5	72·5	76·1	79
24	29·796	83·6	77·7	90·9	77·6	109 0	71·2	75·4	77
25	29·773	84 5	77·8	96·8	78·6	110 7	72·8	75·2	75
26	29·772	84 8	78·5	96·9	80 0	111·5	73·8	76·1	76
27	29·773	85·5	76·7	96·7	79·6	114 5	73·8	73·1	68
28	29 756	84·9	77·1	94·0	77·6	109·9	73·5	74·0	71
29	29·753	85·2	77·5	94·8	77·8	114·5	73·4	74·5	71
30	29·771	83·0	77·7	97·5	74·0	112·5	70 0	75 7	79
31	29·788	82·1	77 5	94·8	75·9	119·5	72·7	75·7	82
Mean........	29·760	84·1	76·8	94·9	77·8	111·5	72·6	73 9	73
Average.....	29·753	82·8	75·8	90·3	77·7	110·5	73·3	72·9	73
Difference...	+ 0·007	+ 1·3	+ 1·0	+ 4·6	+ 0·1	+ 1·0	— 0·7	+ 1·0	0

Rain.	Wind.				Per centage of clouds.	Weather.
Five feet from ground.	Velocity.		Direction.			
	A. M.	P. M.	A. M.	P. M.		
Inches.	Miles.	Miles.	Points.	Points.		
0·13	50	69	19	14	77	Overcast: rain about 1 P. M.
—	46	86	19	19	50	Light clouds.
—	74	78	21	12	83	Overcast.
2·30	55	49	24	19	97	Rain until sunrise.
0 14	64	49	20	19	73	Cloudy; shower about 6 A. M.
—	53	78	22	19	87	Overcast.
—	54	53	21	21	97	do.
0·02	87	111	21	21	90	do.
0·01	110	84	22	23	97	Overcast: shower about 9¼ P. M.
0·26	88	59	22	21	93	Overcast: rain after 8½ P. M.
0 90	53	69	20	18	100	Overcast: drizzle till sunrise; heavy rain about 4 P. M.
—	95	54	20	17	80	Chiefly overcast.
—	58	112	20	17	80	Cloudy.
0·02	65	95	19	18	47	Light clouds: shower about 7¼ P. M.
0·04	65	82	20	23	60	Cloudy: shower about 7¼ P. M.
3·82	143 per day.		S W		81	
2.08	144 per day.		S W by S		72	
+ 1·74	— 1		1 Point W		+9	
—	62	93	19	18	73	Chiefly overcast.
—	78	103	21	21	93	Overcast.
0·01	94	80	19	19	80	Nearly overcast.
—	79	119	20	17	47	Light clouds.
—	81	76	21	15	53	Cloudy.
0·02	77	81	18	15	47	Light clouds: shower at 7 P. M.
0·56	111	61	20	15	40	Rain before 4 A. M.: nearly fine after.
—	99	88	20	16	23	Fine.
0·01	77	119	21	14	23	Nearly fine: light shower before sunrise.
—	85	75	20	16	30	Nearly fine.
0·06	84	78	19	15	47	Cloudy: shower at 1¾ A. M.
—	77	77	20	13	27	Light clouds.
—	70	73	21	14	60	Passing clouds.
0·03	75	100	21	12	50	Cloudy: shower at 11¼ P. M.
—	82	113	22	18	57	Cloudy.
0·05	80	87	24	13	60	Cloudy: rain at 3¾ P. M.
0·74	171 per day.		S W by S		51	
1·78	151 per day.		S W		71	
— 1·04	+ 20		1 Point S		—20	

1862.		Mean Barometer reduced to 32° Faht.	Corrected Mean Temperature.		Self-Registering Thermometers.				Deduced.	
			Dry.	Wet.	Shade. Max.	Shade. Min.	Sun. Max.	Grass. Min.	Dew Point.	Humidity.
		Inches.	°	°	°	°	°	°	°	Per ct.
September ; first half.	1	29·777	84·2	76·9	92·3	76·6	109·5	73·2	74·0	72
	2	29·749	85·5	76·9	94·2	78·4	120·7	74·2	73·4	68
	3	29·761	83·4	75·7	89·7	78·4	99·5	74·0	72·5	71
	4	29·727	84·5	76·8	93·2	79·6	105·5	76·4	73·7	71
	5	29·747	83·6	77·4	96·0	77·8	112·3	74·0	75·0	76
	6	29·763	83·6	76·8	89·9	77·4	114·5	73·4	74·0	74
	7	29·766	84·3	78·0	90·5	77·1	113·5	74·0	75·6	76
	8	29·764	84·8	78·8	90·3	81·1	109·5	77·0	76·5	77
	9	29·718	85·5	78·5	91·9	78·6	112·0	75·2	75·8	74
	10	29·694	85·8	78·3	93·4	79·6	114·5	77·0	75·4	72
	11	29·690	84·4	79·0	91·6	77·6	115·5	75·5	77·0	79
	12	29·707	85·6	78·5	92·5	77·6	114·3	74·0	75·0	68
	13	29·706	83·2	78·3	92·2	78·6	116·5	73·8	76·4	80
	14	29·692	78·5	76·4	87·1	78·4	92·5	75·5	75·6	91
	15	29·668	82·6	77·3	90·9	76·6	109·5	74·1	75·2	79
Mean.........		29·729	84·0	77·6	91·7	78·2	110·7	74·8	75·2	75
Average.....		29·763	82·9	75·7	90·5	77·8	—	74·1	72·7	72
Difference...		− 0·034	+ 1·1	+ 1·9	+ 1·2	+ 0·4	—	+ 0·7	+ 2·5	+ 3
September ; second half.	16	29·712	84·5	77·9	94·0	77·1	109·5	74·7	75·3	75
	17	29·765	85·4	77·9	92·9	77·6	113·7	74·2	75·0	72
	18	29·785	85·1	77·5	94·6	78·7	112·6	76·0	74·5	71
	19	29·786	82·0	76·7	95·5	77·7	113·5	76·8	74·6	79
	20	29·830	79·3	76·0	84·2	76·8	90·9	74·0	75·0	86
	21	29·879	77·8	75·0	83·9	76·6	97·7	75·0	73·8	88
	22	29·899	77·3	75·1	83·2	74·8	95·7	73·0	74·2	90
	23	29·843	79·7	76·4	90·9	74·3	106·0	73·2	75·1	86
	24	29·769	82·7	76·5	90·9	75·8	100·8	73·8	74·0	76
	25	29·726	80·1	76·3	85·6	76·6	93·5	75·0	74·7	85
	26	29·687	81·3	76·8	88·0	72·8	98·5	72·0	75·0	82
	27	29·669	83·1	75·8	89·5	77·8	99·3	75·2	72·8	72
	28	29·671	83·3	76·6	89·8	76·8	99·5	74·8	73·9	74
	29	29·738	83·7	78·4	91·5	76·8	109·5	74·5	76·4	79
	30	29·783	82·6	77·9	90·7	75·2	106·5	73·3	76·1	81
Mean.........		29·769	81·9	76·7	89·7	76·4	103·1	74·4	74·6	80
Average.....		29·796	82·2	76·1	89·1	77·1	104·8	74·0	73·6	76
Difference...		− 0·027	− 0·3	+ 0·6	+ 0·6	− 0·7	− 1·7	+ 0·4	+ 1·0	+ 4

Rain.	Wind.				Per centage of clouds.	Weather.
Five feet from ground.	Velocity.		Direction.			
	A. M.	P. M.	A. M.	P. M.		
Inches.	Miles.	Miles.	Points.	Points.		
—	86	64	22	14	60	Cloudy.
—	60	81	24	13	57	do.
—	54	42	23	23	100	Overcast.
—	41	68	19	19	93	do.
—	79	63	21	14	67	Passing clouds.
0·57	37	67	19	11	32	Light clouds : rain at 2 A. M.
—	39	90	16	12	20	Nearly fine.
—	38	87	15	13	45	Hazy.
—	28	91	16	10	15	Fine.
—	49	89	20	10	23	Nearly fine.
0·04	32	70	18	9	27	Light clouds : shower about 5 A. M.
—	20	59	13	20	53	Cloudy.
0·02	28	50	18	16	83	Dull and oppressive : showery about [noon.
0·21	35	29	16	23	100	Overcast : showers between 9 A. M. & [3 P. M.
—	58	50	21	17	70	Dull and heavy.
0·84	113 per day.		S by W		56	
2·08	133 per day.		S W by S		68	
— 1·24	— 21		2 Points S		—12	
—	52	102	20	16	77	Chiefly overcast.
—	53	103	17	14	57	Cloudy.
—	62	101	19	13	68	do.
0·74	90	84	18	18	88	Overcast : rain at $3\frac{1}{2}$ & 8 P. M.
0·12	19	39	16	14	98	Overcast : showery.
0·22	22	31	15	8	90	Overcast between $5\frac{1}{2}$ and 10 A. M.
0·84	27	30	15	16	75	Overcast : heavy rain about mid-day.
0·13	44	59	20	17	60	Cloudy : rain at $4\frac{1}{2}$ P. M.
—	82	58	22	23	75	Cloudy.
0·22	41	53	22	28	93	Overcast : rain after $11\frac{3}{4}$ P. M.
0·16	77	59	23	24	98	Overcast : rain before 2 A. M.
—	82	65	22	21	93	Overcast.
0·01	92	84	20	18	90	Chiefly overcast : fall about 8 P. M.
—	81	107	18	15	40	Cloudy day : fine night.
0·32	71	40	19	14	17	Nearly fine : shower directly after [mid-night.
2·76	127 per day.		S S W		75	
2·20	126 per day.		S S W		62	
+ 0·56	+ 1		None		+13	

1862.	Mean Barometer reduced to 32° Faht.	Corrected Mean Temperature.		Self Registering Thermometers.				Deduced.	
				Shade.		Sun.	Grass.		
		Dry.	Wet.	Max.	Min.	Max.	Min.	Dew Point.	Humidity.
	Inches	°	°	°	°	°	°	°	Per ct.
October; first half. 1	29·787	82·3	76·0	91·8	77·6	114·2	75·0	73·4	75
2	29·773	84·0	78·2	90·7	77·6	115·5	73·8	76 0	78
3	29·795	84·4	78 0	92·2	78·3	109·0	75·5	75 6	76
4	29·800	82·7	78·7	91·5	77·1	106·5	75·6	77·2	80
5	29·787	78·0	76·0	87 1	73 8	97·5	71·8	75·2	91
6	29 755	82 5	78 4	91·5	76 2	110·5	75·5	76·9	84
7	29·787	82·8	78·4	92·1	76·8	112 7	74·0	76·6	82
8	29·776	82·0	78·3	90·9	76·3	114·5	73·0	76·9	85
9	29·743	81·8	78·4	88·5	78·8	115·5	76 0	77·1	86
10	29·717	79·9	76·5	86·4	77·6	109·5	77·0	75·2	86
11	29·716	81·1	76·9	87·1	75·1	111 5	73 8	75·3	83
12	29·778	82·1	77·6	88·7	76·4	109·5	74·0	75·8	82
13	29·827	82·9	77 0	88·3	78·4	107 5	76·0	74·6	77
14	29·844	82 5	77·3	88·7	77·6	110·5	74·5	753·	79
15	29.831	83·8	77·9	89·6	77·0	114·5	74·0	75·6	77
Mean........	29·781	82·2	77·6	89·7	77·0	110·6	74·6	75·8	81
Average.....	29·822	80·8	76·0	86·5	75·9	109·5	74·1	74·1	81
Difference...	− 0·041	+ 1·4	+ 1·6	+ 3·2	+ 1·1	+ 1·1	+ 0·5	+ 1·7	0
October; second half. 16	29 845	83 0	77·7	90·2	77·4	114·3	74·0	75·7	79
17	29·852	82·2	77·4	88 9	77 6	112·4	74 6	75·5	81
18	29·832	81·6	76·9	88·6	77·1	107·3	74·2	75·0	81
19	29·800	80 6	76·6	90·7	75·1	114·5	72·8	75·0	84
20	29·772	81·2	75·6	89·6	76·1	114·5	73·2	73·3	78
21	29·753	83 8	77·6	92·3	76·5	105·5	74·0	75·2	76
22	29·765	83·4	77·0	94·4	77·6	111·4	75·0	74·5	75
23	29·783	85·5	77·8	94·7	78·2	105·5	75·9	74·8	71
24	29·802	85·3	76·7	93·7	77·6	108·0	75·1	73·2	68
25	29·823	84·1	76·6	91·5	78·4	109·0	75 5	73·5	71
26	29·867	80·5	77·5	89·7	78·0	—	75·3	76·3	88
27	29·861	81·0	76 9	87·2	76·6	111·0	74·1	75·3	84
28	29·889	81·2	74 9	87·5	75·6	112·7	72·9	72·2	75
29	29·894	81·0	74·3	87·3	74·8	106·5	70 8	71·4	73
30	29·850	75·4	73·3	78·9	72·4	—	71·0	72·4	91
31	29·830	72 6	72·5	78·7	71·8	—	71.0	72·4	100
Mean...	29·826	81·4	76·2	89·0	76·3	—	73·7	74·1	80
Average.....	29·873	79·0	74·5	84·2	74·3	—	73·0	72·6	82
Difference ..	− 0·047	+ 2·4	+ 1·7	+ 4·8	+ 2·0	—	+ 0·7	+ 1·5	− 2

Rain.	Wind.					
Five feet from ground.	Velocity.		Direction.		Per centage of clouds.	Weather.
	A. M.	P. M.	A. M.	P. M.		
Inches.	Miles.	Miles.	Points.	Points.		
—	37	51	17	5	48	Light clouds.
—	37	68	15	12	7	Fine.
—	64	74	16	13	30	Chiefly fine.
—	49	41	19	4	82	Dull and cloudy.
1·23	44	45	20	20	100	Overcast : rain from 3 to 9 A. M.
—	64	31	18	14	33	Light clouds.
—	35	51	17	12	22	Fine.
—	53	26	20	16	32	Fine day : cloudy night.
0·01	42	29	26	3	83	Overcast.
0·19	23	42	22	2	75	Cloudy : rain before 10 A. M.
—	22	48	31	7	30	Light clouds.
—	16	56	9	12	18	Nearly fine.
—	34	56	13	10	27	Fine with passing clouds.
—	23	47	10	9	23	Fine but hazy.
—	38	35	9	10	22	Hazy.
1·43	85 per day.		S S E		42	
5·08	105 per day.		S by E		58	
— 3·65	— 20		1 Point E		—16	
—	46	29	12	10	22	Light hazy clouds.
—	20	43	11	10	57	Cloudy.
—	15	43	14	9	85	Nearly overcast.
—	24	55	14	6	88	Overcast : shower at 3 A. M.
—	14	55	2	5	80	Dull and heavy.
—	85	84	20	16	70	Heavy passing clouds.
—	110	108	18	18	45	Cloudy.
—	90	83	19	18	65	Dull day : fine night.
—	73	47	21	0	40	Hazy clouds.
—	40	41	18	28	73	Nearly overcast.
1·66	31	25	24	12	83	Overcast : rain from noon till 1¼ P. M.
0·17	21	56	22	6	53	Flying clouds : rain about noon.
—	26	72	2	4	10	Nearly fine.
0·37	51	126	0	0	57	Hazy : rain after 10 P. M.
1·35	112	96	0	0	100	Steady rain for 13 hours.
3·22	83	57	0	21	100	Heavy rain from 0¾ to 9¼ A.M. and from 1¾ to 3¼ P. M.
6·77	116 per day.		S E by E		64	
7·87	112 per day.		E N E		58	
— 1·10	+4		15 Points		+6	

1862.	Mean Barometer reduced to 32° Faht.	Corrected Mean Temperature.		Self Registering Thermometers.				Deduced	
				Shade.		Sun.	Grass.		
		Dry.	Wet.	Max.	Min.	Max.	Min.	Dew Point.	Humidity.
	Inches.	°	°	°	°	°	°	°	Per ct.
November; first half. 1	29·910	78·0	76·4	84·3	70·6	108·0	68·6	75·8	93
2	29·944	78·4	75·3	84·0	73·6	107·5	73·0	74·0	87
3	29 906	80·0	75·4	84·6	75·3	106·4	74·0	73·5	81
4	29·898	80·3	75·6	85·3	75·2	107·5	73·6	73·7	81
5	29·911	79·3	75·3	84·7	74·1	107·5	70·3	73·6	83
6	29·901	79·4	74·8	84 5	74 6	106·2	71·6	72·9	81
7	29 883	79·8	73 5	84 5	73·8	105·2	72·0	70·7	75
8	29 895	78·8	70·8	83·5	74·9	104 5	72·3	66·9	68
9	29·889	77·7	69·5	82·9	72·8	107 0	69·3	65·3	67
10	29·890	75·8	68·6	81·8	68 6	104·0	63 2	64·8	70
11	29·895	76 9	70 5	82·7	68·8	104·5	63·8	67·4	73
12	29·913	77·6	73·0	83·3	71·8	100·3	67·7	70·9	81
13	29·910	79·0	75·0	85·2	72 6	109 2	69 0	73·3	83
14	29·888	79·9	73·8	83·8	75·8	104 2	73·0	71·1	76
15	29·920	78·8	71·7	82·5	76·6	101·0	73·5	68·3	72
Mean......	29·904	78·6	73·3	83·8	73·3	105·5	70·3	71·0	78
Average.....	29·914	77·6	72·1	82·3	73·1	104·8	68·1	69·6	77
Difference..	— 0·010	+ 1·0	+ 1·2	+ 1·5	+ 0·2	+ 0·7	+ 2·2	+ 1·4	+ 1
November; second half. 16	29·924	78·0	71·7	83·3	71·6	103·6	68·2	68·7	74
17	29·902	77·0	73·0	81·6	74·2	—	73·0	71·2	83
18	29·883	78·0	73·2	81·4	73·6	—	72·6	71·1	80
19	29·961	75·4	73·4	78·8	73·8	—	72·9	72·4	91
20	29·996	76·4	72·4	80·9	73·6	—	72·1	70·6	83
21	29·912	74·5	72·4	80·2	72·8	—	70·1	71·5	91
22	29·854	76·8	75·5	84·6	72·1	105·5	67·9	75·0	95
23	29·867	76·2	74·6	81·8	73·6	94·7	73·0	73·9	93
24	29·902	75·7	74·0	78·9	73·8	—	72·1	73·3	92
25	29·943	76·5	72·2	82·4	73·4	101·7	72·8	70·2	82
26	29·945	77·1	71·9	81·1	70 6	100·6	65·5	69·5	78
27	29·929	77·7	73·5	82·3	72·6	97·3	68·4	71·7	82
28	29·932	77·2	73·2	83·4	73·0	101·2	68·5	71·5	83
29	29·953	77·2	73·5	82·4	73·1	99·5	70·1	71·9	84
30	29·941	78·0	73·8	83·7	73·6	102·5	70·0	72·0	82
Mean......	29·923	76·8	73·2	81·8	73·0	—	70·5	71·6	85
Average.....	29·950	76·2	71·1	81·1	71·7	—	695	68·7	78
Difference...	— 0·027	+ 0·6	+ 2·1	+ 0·7	+ 1·3	—	+ 1·0	+ 2·9	+ 7

Rain.	Wind.				Per centage of clouds.	Weather.
Five feet from ground.	Velocity.		Direction.			
	A. M.	P. M.	A. M.	P. M.		
Inches.	Miles.	Miles.	Points.	Points.		
0·08	25	52	7	6	40	Fine with passing clouds.
1·29	54	16	2	5	70	Rain from 1½ to 8 A. M & at 1 P. M.
0·11	52	73	31	2	37	Flying clouds: shower at 3 A. M.
—	46	77	1	3	18	Nearly fine.
—	43	73	2	2	22	Flying clouds.
0·01	45	97	1	3	37	do.
—	73	100	4	5	25	Light flying clouds.
—	69	84	4	4	23	Light haze.
—	37	82	2	3	12	Chiefly fine.
—	45	64	2	3	1	Fine.
—	49	70	2	1	13	Nearly fine.
0·08	60	77	31	2	50	Passing clouds: shower at 5½ A. M.
0·02	39	96	2	4	28	Chiefly fine.
—	79	109	4	3	45	Passing clouds.
—	89	109	3	2	38	do.
1·59	132 per day.		N E by N		31	
6·28	121 per day.		N N E		60	
− 4·69	+ 11		1 Point E		—29	
—	30	101	0	1	20	Light clouds.
0·07	77	85	1	1	92	Overcast: shower at 3 A. M.
0·13	76	94	0	2	100	Overcast: frequent showers.
1·12	62	43	2	1	100	Rain from 6 A. M. to 2½ P. M. also after [11 P. M.
0·09	57	79	29	0	90	Light showers.
0·11	74	82	29	29	92	Light showers: rain at 7 P. M.
0·12	100	36	0	6	77	Shower at 4½ A. M.
0·14	39	56	1	2	80	Rain from 1 to 2½ A. M.
2·13	30	58	3	2	92	Rain from 5½ A. M. to noon.
0·02	62	68	1	1	68	Passing clouds.
—	54	66	1	2	43	Hazy clouds.
—	49	85	3	3	80	Chiefly overcast.
—	50	90	2	2	77	Passing clouds.
—	62	77	3	3	78	do.
—	55	69	3	2	27	Hazy.
3·93	131 per day.		N by E		74	
5·52	133 per day.		N N E		55	
− 1·59	— 2		1 Point N		+19	

1862.	Mean Barometer reduced to 32° Faht.	Corrected Mean Temperature.		Self Registering Thermometers.				Deduced.	
				Shade.		Sun.	Grass.		
		Dry.	Wet.	Max.	Min.	Max.	Min.	Dew Point.	Humidity.
	Inches.	°	°	°	°	°	°	°	Per ct
December; first half.									
1	29·974	76·6	72·2	82 2	72·5	101·5	67·5	70·2	81
2	29·991	78·5	72·6	82·7	71·8	103·2	66·0	69·9	75
3	29·992	78·3	69·5	81·6	74·4	98·1	68·0	64·9	65
4	29·985	77·5	71·4	81·7	72·6	99·5	67·0	68·5	75
5	29 957	76·1	70·8	82·2	70·9	97·4	65·7	68·3	78
6	29·933	75·6	70·9	80·2	71·1	92·6	66·3	68 6	80
7	29·936	76·4	70·3	80·7	69·8	96·5	64·7	67·3	75
8	29·959	75·8	69·9	81·6	71·4	98·5	63·4	66·9	75
9	29·909	74·5	69 6	81·2	67·6	99·5	58·4	67·1	78
10	29·893	75·7	72·5	79·9	67·7	96·2	60·7	71·1	86
11	29·916	75·5	73·7	80·6	69·6	95·5	62·4	72·9	92
12	29·879	76·1	74·5	81·0	71·6	94·5	66·0	73·8	93
13	29·850	71·3	71·1	83·1	72·2	—	67·8	71·0	99
14	29·836	74·1	72·2	79·9	71·8	—	66·8	71·3	91
15	29·854	75·8	70·7	79·6	71·7	95·1	66·2	68·2	79
Mean........	29·924	75·9	71·5	81·2	71·1	—	65·1	69·4	81
Average......	29·957	75·3	70·3	80·1	70·8	—	65·8	67·9	79
Difference...	— 0·033	+ 0·6	+ 1·2	+ 1·1	+ 0·3	—	— 0·7	+ 1·5	+2
December; second half.									
16	29·845	75·8	72·0	79·5	73·6	92·7	66·1	70·2	84
17	29·824	71·9	70·3	75·0	69·1	—	64·4	69·5	93
18	29·784	71·7	69·8	73·9	70·4	—	66·5	68·8	91
19	29·778	69 3	64·1	72·1	67·1	—	61·8	61·0	76
20	29·791	71·6	66·4	74 3	68·1	—	61·0	63·6	77
21	29·798	73·0	71·3	77·2	70·5	87·4	63·1	70·5	92
22	29·785	73·7	70·9	79·1	71·7	—	65·0	69 6	88
23	29·810	74·0	71·8	76·5	71·6	—	67·0	70·8	90
24	29·848	73·6	72·1	77·1	72·8	—	66·0	71·4	93
25	29·879	76 6	74·6	78·3	72·5	80 5	68·0	73·8	91
26	29·922	73 4	72·5	78·8	72 5	96·5	—	72·1	95
27	29·964	72·4	70·8	73·6	71·5	—	71·3	70·0	94
28	29 997	74·3	71·8	79·5	71·8	96·7	71·3	70·6	89
29	30·013	72·7	68·9	78·2	68·3	95·0	65 9	66·9	83
30	30·055	70·5	67·4	77·4	65·4	95·5	61·6	65 8	86
31	30·050	69·8	66·6	77·7	62·6	100·0	56·9	64·9	85
Mean........	29·884	72·8	70·1	76·8	70·0	—	65·1	68·8	88
Average......	29·996	74·5	68·8	79·5	69·5	—	63·8	65·9	76
Difference...	— 0·112	— 1·7	+ 1·3	— 2·7	+ 0·5	—	+ 1·3	+ 2·9	+12

Rain. Five feet from ground	Wind. Velocity. A. M.	P. M.	Direction. A. M.	P. M.	Per centage of clouds.	Weather.
Inches.	Miles.	Miles.	Points.	Points.		
—	43	53	2	3	23	Fine with passing clouds.
—	49	73	3	3	27	do. do.
—	110	122	3	3	30	Hazy clouds: lunar halo.
—	99	115	2	2	62	Hazy clouds: colored do. at 10 P. M.
—	83	97	0	1	63	Passing clouds: lunar halo.
—	74	93	1	1	82	Dull and heavy.
—	76	126	31	3	37	Flying clouds.
—	94	90	3	1	33	Light hazy clouds.
—	52	85	0	1	30	Passing clouds.
—	60	94	31	0	25	Hazy clouds.
—	74	112	0	1	68	Heavy clouds.
0·04	90	128	0	1	95	Overcast: rain at mid-night.
1·36	86	67	30	30	100	Rain—chiefly before noon.
3·28	91	94	31	0	100	Heavy rain.
0·01	84	106	31	0	97	Overcast.
4·69	176 per day.		N by E		58	
3·98	141 per day.		N N E		55	
+ 0·71	+ 35		1 Point N		+ 3	
—	98	139	0	31	93	Overcast.
0·29	130	111	30	31	100	Do. rain 7½ A. M. & 3½ P. M.
0.63	110	112	31	30	100	Do. rain chiefly before noon.
0·03	117	112	29	30	100	Do. shower at 2½ P. M.
—	118	125	30	31	100	Do.
0·09	129	142	31	0	97	Showery and overcast.
0·02	118	129	0	0	87	Chiefly overcast: shower at 11¾ P. M.
0·18	108	79	0	0	100	Showery and overcast.
0·17	121	87	31	0	100	Overcast: rain at 10 A. M.
—	103	88	2	3	100	Overcast.
0·39	55	95	0	0	98	Do. rain from 1½ to 8½ A. M.
0·49	91	88	0	1	97	Do. rain between 3½ & 11 A. M.
0·02	67	91	1	0	70	Clouds breaking: fine night.
—	75	94	0	2	35	Light passing clouds.
—	62	58	0	1	27	Chiefly fine.
—	26	49	2	3	3	Fine.
2·31	195 per day.		N		82	
2·33	153 per day.		N N E		50	
— 0·02	+ 42		2 Points N		+ 32	

The mean atmospheric pressure throughout the whole year was 29·830 inches ;—0·014 less than the average of twenty years. The highest reduced readings were 30·018 on February 12th, and 30·123 on December 31st :—the lowest was 29·508 on June 29th.

The greatest degree of heat registered in the shade, was 107°·1, on May 30th : in full sunshine, three feet from the ground, 124°5 on May 17th. The lowest temperatures were recorded on February 27th and December 31st, on which days the shade minimum went down to 63°·5 and 62°·6, and the grass thermometer to 58°3 and 56°·9 respectively. The mean annual temperature was 81·3, or 0·7 above average. That of evaporation, as shewn by the wet bulb thermometer, was 74·9, or 0·9 above average. The mean daily range for the year was 14°·5.

The dryest day in the year was June 12th, when the percentage of humidity fell so low as 42, and the mean dew point was 63°·1, or 27°·4 less than the mean temperature of the day. Complete saturation of the atmosphere occurred but once, viz, on October 31st.

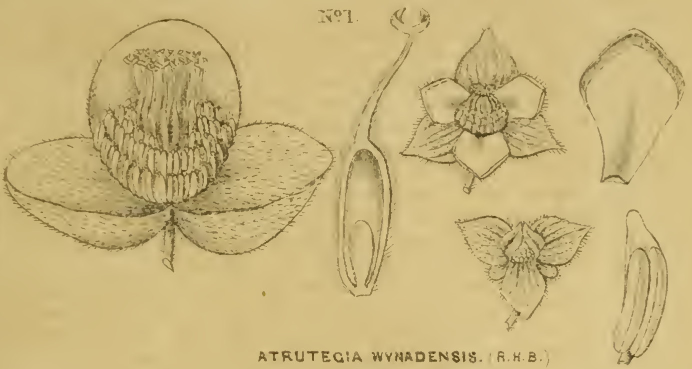
Rain fell on 96 days. The quantity measured was above one inch on 113 days, but the greatest fall was only 3·28 inches, on December 14th. The total fall during the year was only 38·18 inches, leaving a deficiency of 12·57 inches or exactly one-fourth of the whole yearly average.

The mean daily velocity of the wind was 151 miles, from S E by S. It was recorded half daily, and ranged between 165 miles on May 22nd P. M., and 14 miles on October 20th A. M. It is worthy of remark, that, although the wind at Madras is insignificant in comparison of that in England, it is far more constant, and rarely ever quite still. Not one single half day has been perfectly calm since the velocity gauge was first put up, on September 1st 1861. During the steadier months of the year, the resultant velocity, or that in which the force from each point of the compass is taken into account, often nearly equals the mean velocity, and rarely falls short of three-fourths of the latter quantity. In the two variable periods however, the difference is very considerable. Thus, in the latter half of March, while the actual daily wind was 125 miles, from N N E, the resultant value was only 40 miles, from East ; but in the latter half of October, when the daily motion was 116 miles from S E, the resultant value was only 3 miles per day, from S S W. This remarkable effect of contrary winds must surely have considerable influence upon the public health and mortality returns ; since any miasmatic vapors existing in the atmosphere at the time, though stirred up and diffused by the actual daily wind, will still be blown backwards and forwards, so as to continue hanging about, or at least only very slowly receding from, the same spot ; while at other times they would be wafted a thousand miles off in less than a single week. The number of half days the wind blew from each point of the compass is given in the following table :—

North..........	31	East............	14	South	47	West............	5
N by E	28	E by S.........	13	S by W.......	36	W by N..	1
N N E	30	E S E..........	17	S S W..........	41	W N W	4
N E by N......	42	S E by E	14	S W by S......	42	N W by W....	1
North East....	16	South East....	21	South West...	32	North West....	2
N E by E......	32	S E by E..	33	S W by W...	32	N W by N.. ..	4
E N E..........	21	S S E	60	W S W	19	N N W..	9
E by N.........	13	S by E..........	44	W by S.........	11	N by W........	15
From N E Quarter	213.	From S E Quarter	216.	From S W Quarter	260.	From N W Quarter	41

NORMAN ROBERT POGSON,
Government Astronomer.

No. 1.



ATRUTEGIA WYNADENSIS. (R.H.B.)

No. 2.

ANACOLOSA DENSIFLORA. (R.H.B.)

No. 3.

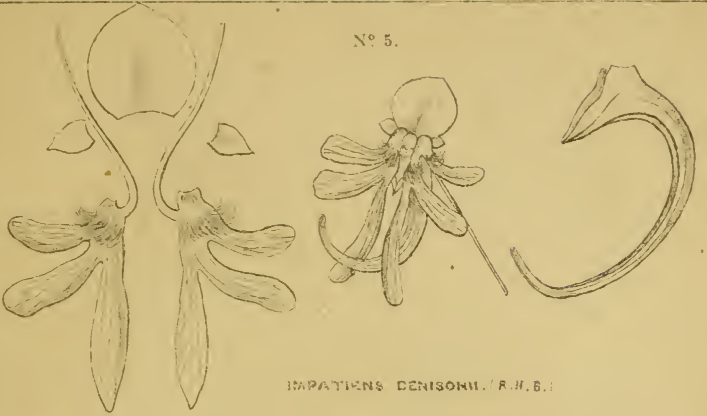
BEDDOMEA SARMENTOSA. (HOOK FIL.)

No. 4.

LANSIUM ANAIMALAIENSE (R.H.B.)

A. Barren Lithog. Madras

No. 5.



IMPATIENS DENISONII. (R. H. B.)

No. 6.

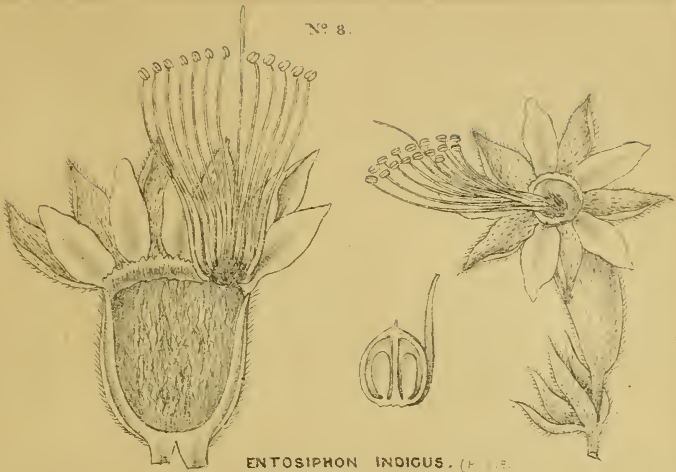
IMPATIENS ORCHIOIDES. (R. H. B.)

No. 7.

ZIZYPHUS WYNADENSIS. (R. H. B.)

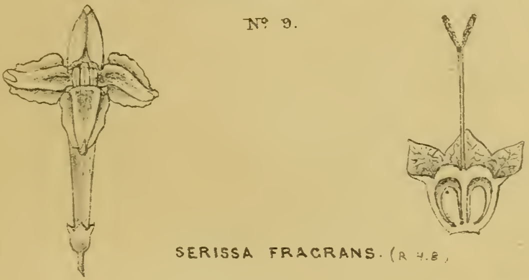
A. P[illegible] Lith[illegible] Madras

No. 8.



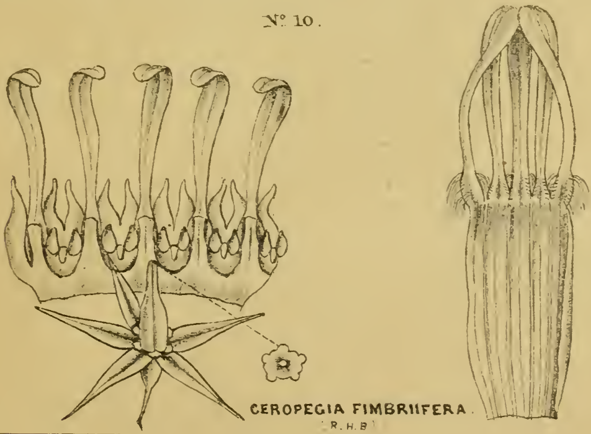
ENTOSIPHON INDICUS. (R. H. B.)

No. 9.



SERISSA FRAGRANS. (R. H. B.)

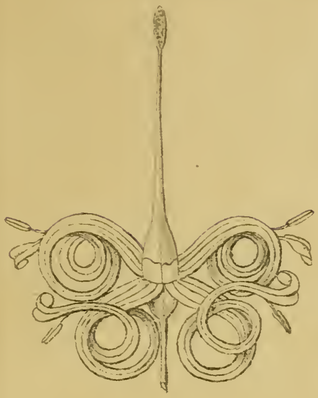
No. 10.



CEROPEGIA FIMBRIIFERA.
(R. H. B.)

A. Barren. Lithogr. Madras

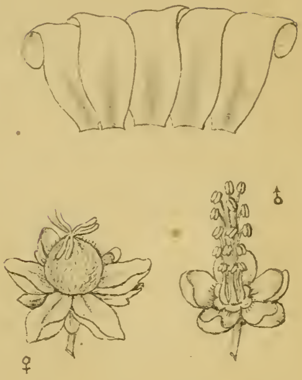
No. 11.



HELICIA NILAGIRICA

(R. H. B.)

No. 12



DESMOSTEMON ZEYLANICUS.

(THWAITES.)

No. 13.

DIMORPHOCALYX GLABELLUS. (THWAITES.)

No. 14.

CLEIDION JAVANICUM. (BLUME.)

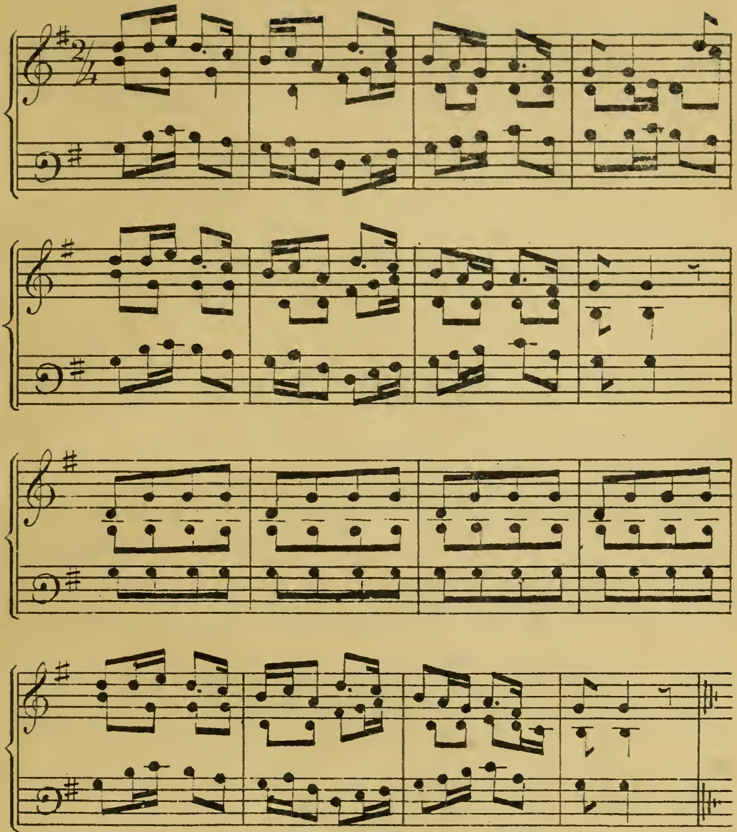
[illegible] Lithog. Madras

No 15.

BEGONIA (D) MINIMA. (R.H.B.)

A. Barren, Lithogr., Madras.

Nº 1.



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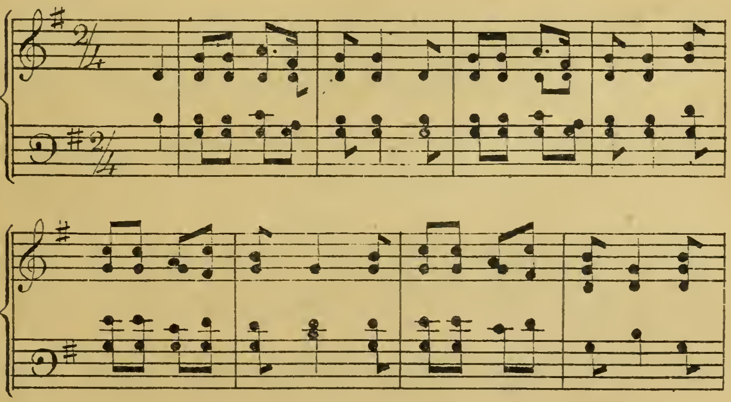

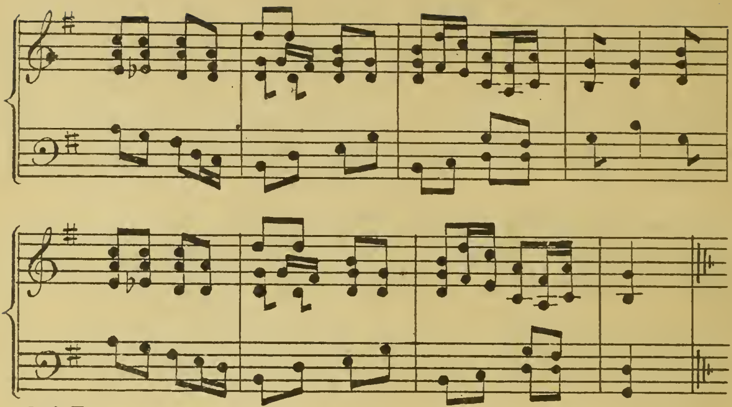

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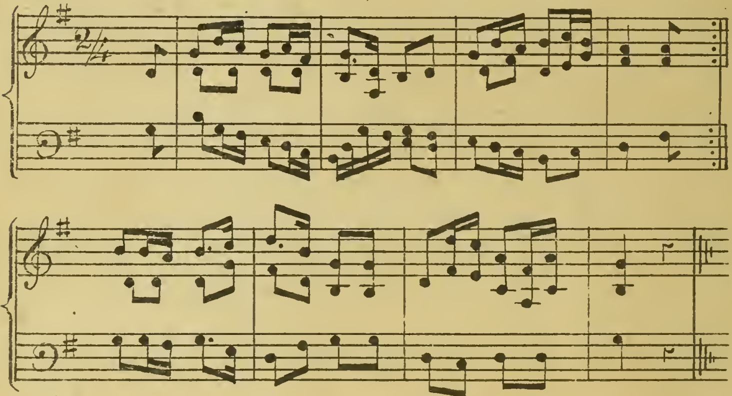

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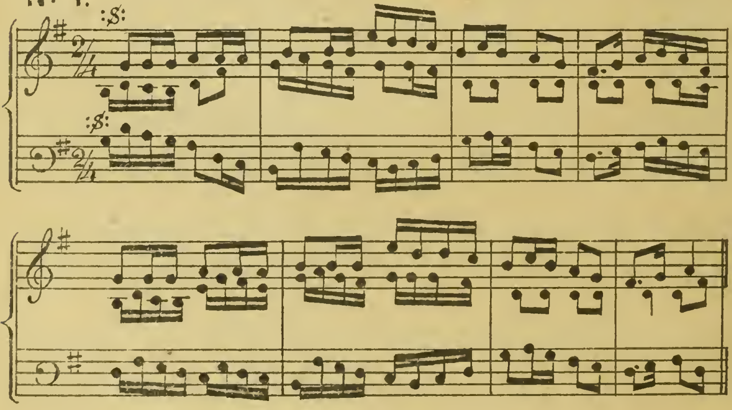

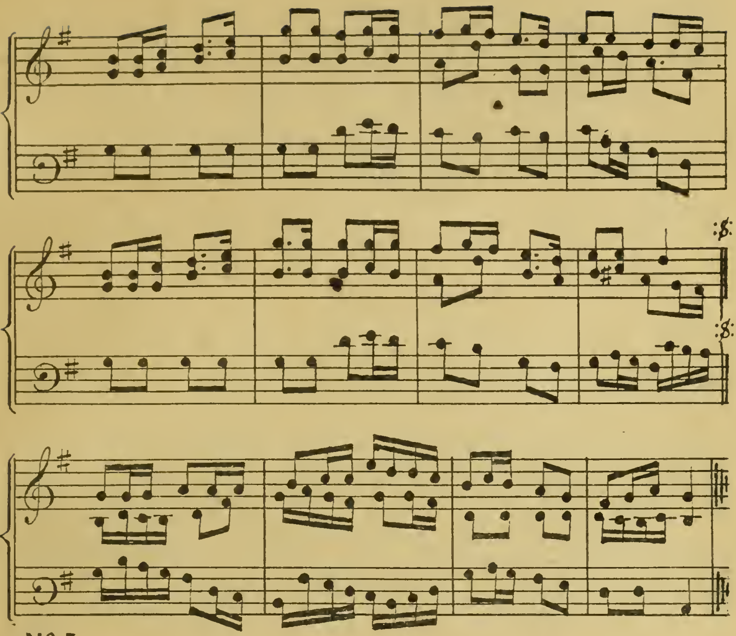

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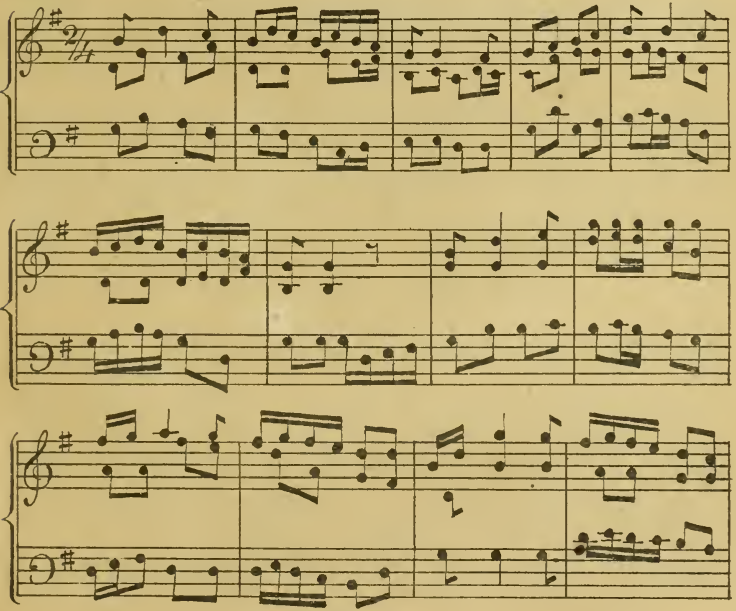
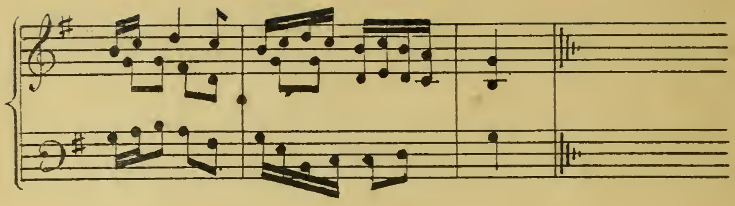
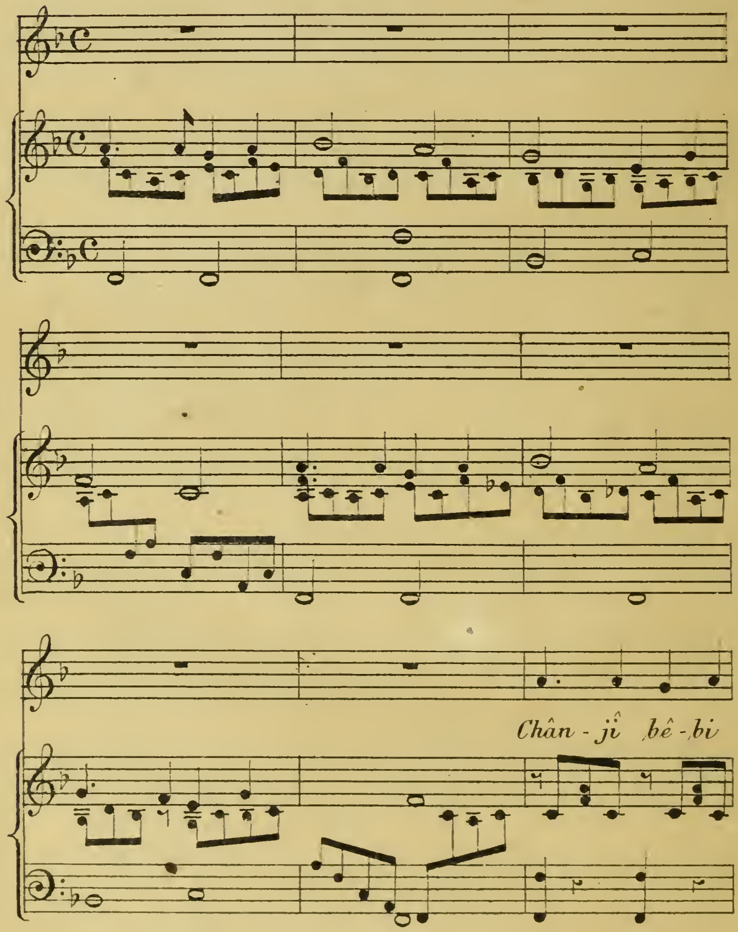
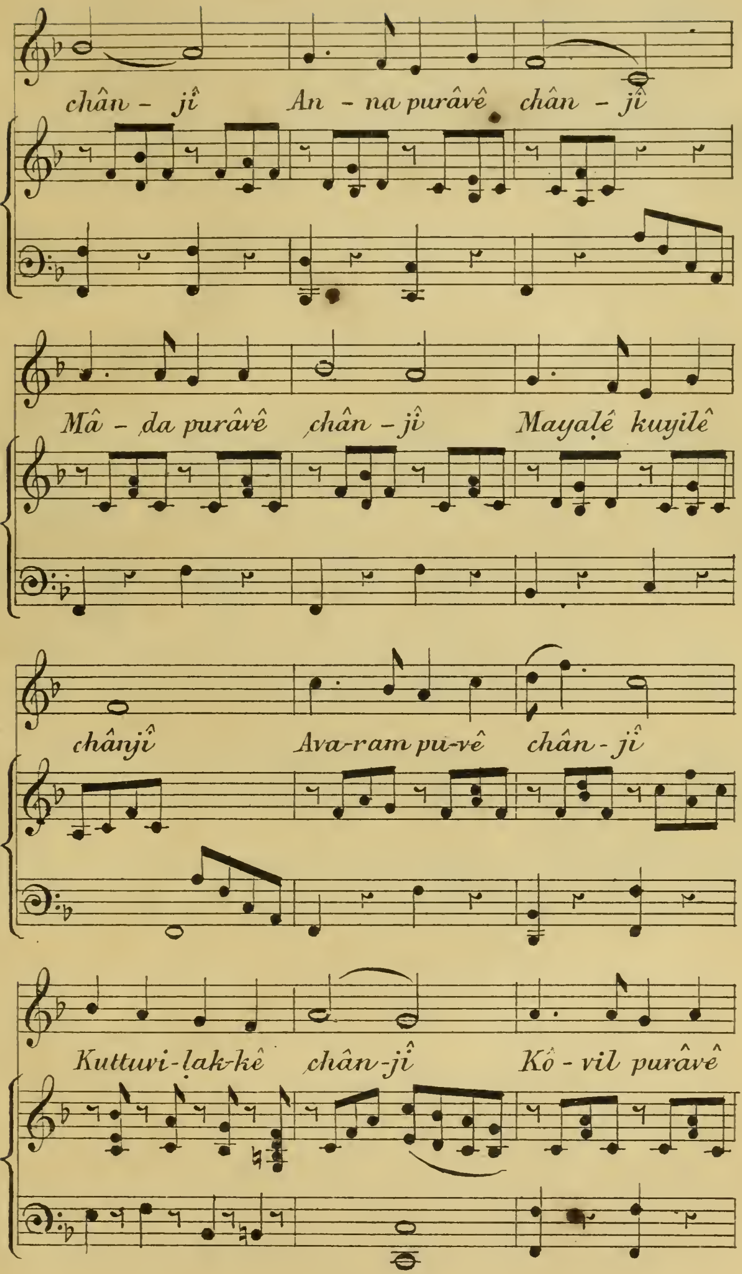




CRADLE SONG. Malabar.

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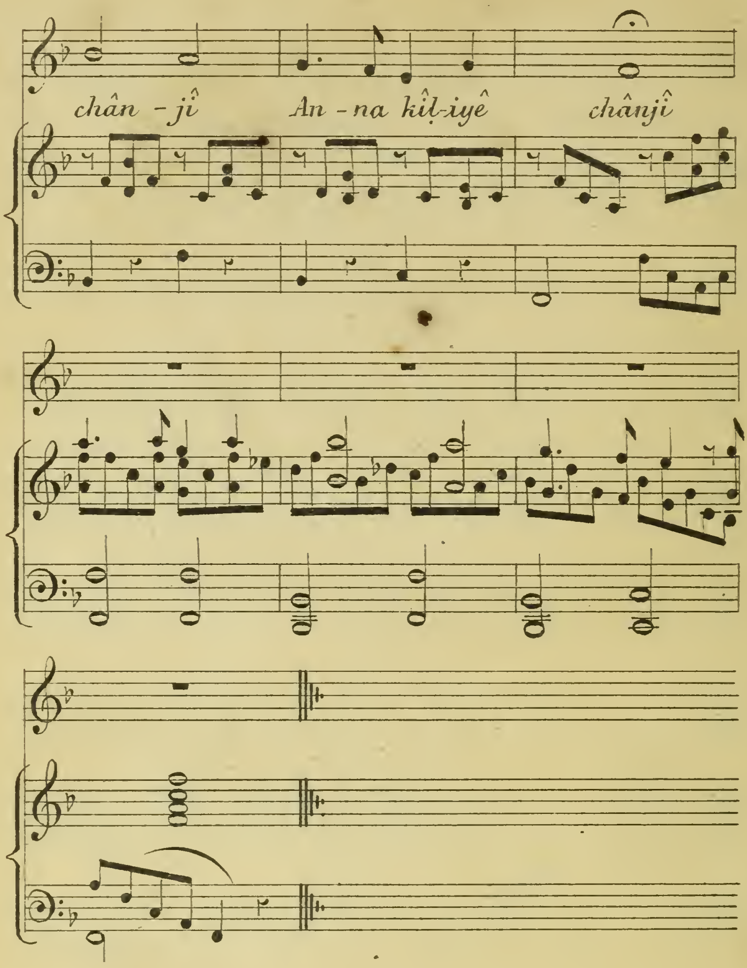
Mâ - da purâvê chân - jî Mayaḷê kuyilê
chânjî Ava-ram pu-vê chân - jî
Kuttuvi-ḷak-kê chân-jî Kô - vil purâvê


chân - jî
An - na kîḷ-iyê
chânjî